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BOTANICAL SURVEY ALONG THE YELLOWKNIFE HIGHWAY, NORTHWEST TERRITORIES, CANADA
I. CATALOGUE OF THE FLORA

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The Yellowknife Highway, begun in 1957 and officially opened in 1961, makes accessible a previously remote area in the District of Mackenzie, Northwest Territories. The area was botanically almost unknown. Thus the highway offered an unparalleled opportunity for botanical exploration. The 280 mile road links Yellowknife with Enterprise (see figure 1), a settlement on the Mackenzie Highway, the only all-weather road giving access to the Northwest Territories.

With the belief that a study of the highway region's flora and vegetation would be a significant contribution to knowledge of plants in boreal western North America, I carried out a botanical survey along the highway from August 2-14, 1958; June 15-August 9, 1959; June 13-August 4, 1961; and August 7-September 2, 1962. My work along the highway involved the following major procedures.

(1) The making of a plant collection to document the flora, and the recording of distributional, phenological, habitat, life-form, and other data. Major attention was paid to vascular plants but many non-vascular plants, especially lichens and mosses, were collected also. Some significant floristic records have already been reported (Thieret, 1961, 1962, 1963) and a paper on the life-form spectrum of the southern Mackenzie Great Plains has been published (Thieret, 1963).

(2) The carrying out of a primary survey of the vegetation, that is, recognizing and describing the major plant communities and listing their floristic composition. A paper on grasslands near Fort Providence has already appeared (Thieret, 1959).

This paper is one of two that will present the data obtained. It contains a catalogue of the plants collected, a total of 4160 numbers. The concluding paper will contain descriptions of the region and of its major plant communities.

Southwestern District of Mackenzie, that portion of Mackenzie in which the highway is located, is about the size of Louisiana, Mississippi, Alabama, and Georgia combined. Prior to the work of Porsild (1945) and Raup (1947), little serious field study of plants had been done there. The specimens available as vouchers for the flora had been collected for the most part at Great Slave Lake or along the Mackenzie River. No study had been made of the vegetation. Porsild (1945) published an annotated catalogue of the alpine flora of the east slope of the Mackenzie Mountains, based largely on his collections made along the NWT portion of the Canol Road. Raup's *Botany of Southwestern Mackenzie*

SIDA 1 (3): *117—170. 1963.*

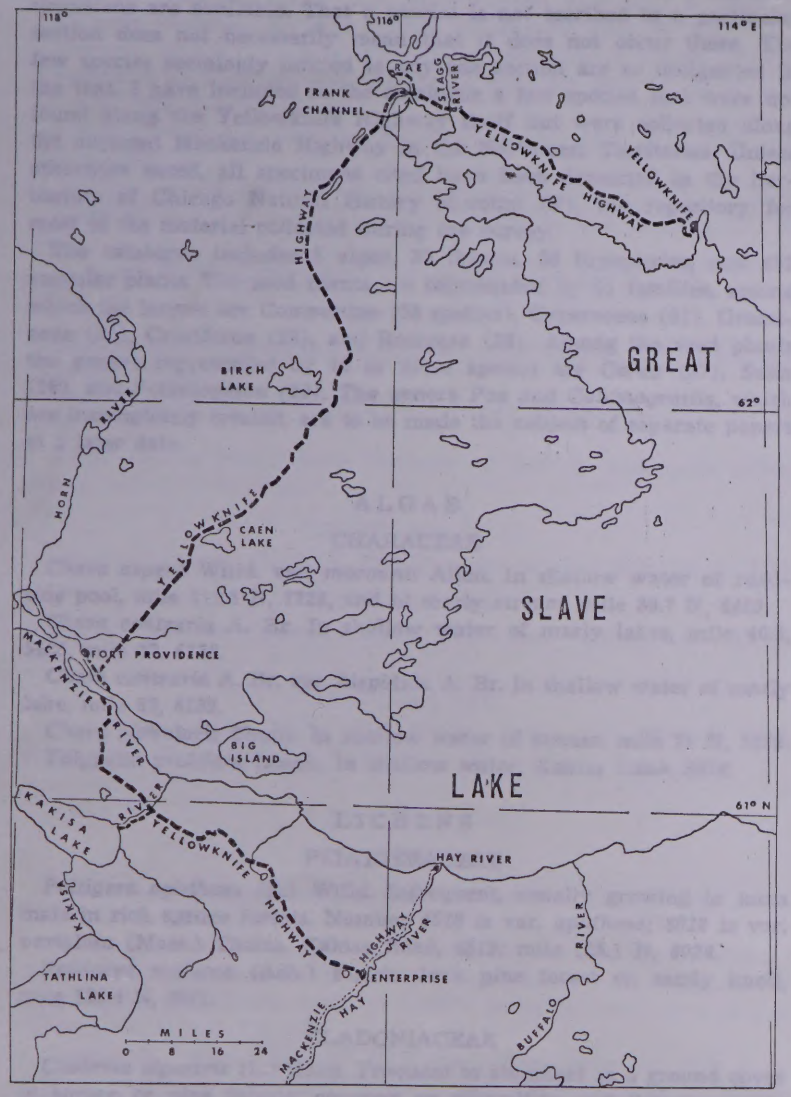

Fig. 1. The Yellowknife Highway Region, Northwest Territories, Canada

(1947) contains an annotated catalogue of the then-known flora of southwestern Mackenzie and a description, based on his field study, of flora and vegetation at Fort Simpson and at Brintnell Lake (which are west of the highway region). Since then, the only work in southwestern Mackenzie, other than the present investigation, was done by Cody (1957, 1961, 1963) and Jeffrey (1961). A part of Cody's work touched portions of the Yellowknife Highway region; his papers present significant floristic records. Jeffrey's paper contains a catalogue of the plants and a description of the vegetation along the lower Liard River (about 150 miles west of the highway).

Porsild's *Botany of Southeastern Yukon adjacent to the Canol Road* (1951) and Raup's *Botanical Investigations in Wood Buffalo Park* (1935) are important contributions pertaining to areas adjacent to southwestern Mackenzie. Each of these papers includes a description of the area investigated, a catalogue of the flora, and a primary survey of the vegetation. Other useful publications covering areas adjacent to southwestern Mackenzie are those by Cody (1960), Hulten (1941-1950), Moss (1953, 1953a, 1955, 1959), Porsild (1934), and Raup (1935, 1936, 1946).

The Yellowknife Highway lies partly in the northern Great Plains and partly in the Canadian Shield. The border between these physiographic provinces is at Frank Channel. The Frank Channel-Yellowknife section of the highway is in the Shield; the Enterprise-Frank Channel section is in the Plains. Elevation along the highway ranges between 513 feet (at the Mackenzie River) and nearly 900 feet. The region transected by the highway presents a variety of habitats for plants. These include marly lakes, muck (i.e., organic detritus) bottom lakes, rocky shores, cold swift streams, Palaeozoic carbonate (limestone) outcrops, Pre-Cambrian crystalline outcrops, sand deposits, grasslands, forests, and areas disturbed by man and fire. The flora and vegetation of the region are correspondingly diversified.

In the following catalogue the genera and species are alphabetically arranged within the families. For the most part the nomenclature used for vascular plants is that of the *Flora of Manitoba* (Scoggan, 1957); synonymy is given when a name differs from the one used there. After each species name (among the seed plants) is an indication of the life-form according to the Raunkiaer classification, employing the usual abbreviations. Then follow other pertinent data (e.g., relative abundance, typical habitat[s], phenology, etc.) and citation of representative specimens by locality and by collection number. Locality is usually given by mile number. A mile number followed by "N" indicates the Mackenzie River-Frank Channel section of the highway and refers to miles north of the river; a mile number followed by "S" indicates the Frank Channel-Yellowknife section and refers to miles from the Yellowknife airport; and a mile number alone indicates the Enterprise-Mackenzie River section and refers to miles from Enterprise. For each

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SLAVE
LAKE

species, a specimen from each of the three sections is cited when such specimens are available. That a species is not ascribed to a particular section does not necessarily mean that it does not occur there. The few species seemingly limited to any one section are so designated in the text. I have included in the catalogue a few species that were not found along the Yellowknife Highway itself but were collected along the adjacent Mackenzie Highway in the Northwest Territories. Unless otherwise noted, all specimens cited have been deposited in the herbarium of Chicago Natural History Museum (F), the repository for most of the material collected during the survey.

The catalogue includes 5 algae, 35 lichens, 38 bryophytes, and 452 vascular plants. The seed plants are represented by 61 families, among which the largest are Compositae (55 species), Cyperaceae (51), Gramineae (35), Cruciferae (23), and Rosaceae (22). Among the seed plants the genera represented by 10 or more species are *Carex* (37), *Salix* (18), and *Potamogeton (10)*. The genera *Poa* and *Calamagrostis*, which are incompletely treated, are to be made the subject of separate papers at a later date.

ALGAE

CHARACEAE

Chara aspera Willd. var. *macounii* Allen. In shallow water of roadside pool, mile 110.5 N, *7728*, and of marly stream, mile 39.7 N, *8420*.

Chara contraria A. Br. In shallow water of marly lakes, mile 40.5, *5426*, mile 37, *6138*.

Chara contraria A. Br. var. *hispidula* A. Br. In shallow water of marly lake, mile 37, *6139*.

Chara globularis Thuill. In shallow water of stream, mile 75 N, *7375*.

Tolypella prolifera Leonh. In shallow water, Kakisa Lake, *5674*.

LICHENS

PELTIGERACEAE

Peltigera aphthosa (L.) Willd. Infrequent, usually growing in moss mats in rich spruce forests. Number *4519* is var. *aphthosa; 8028* is var. *variolosa* (Mass.) Thoms. Kakisa Road, *4519;* mile 125.1 N, *8028*.

Peltigera malacea (Ach.) Funck. Jack pine forest on sandy knoll, mile 123.4 N, *8071*.

CLADONIACEAE

Cladonia alpestris (L.) Rabh. Frequent to abundant as a ground cover in spruce or pine forests; common on crystalline and limestone outcrops. In the open jack pine forests around mile 120 N, the white sand is almost completely covered with this and other lichens, and the ground appears yellow. Mile 28.5, *4932;* mile 123.4 N, *8053;* mile 39.8 S, *8326*.

Cladonia alpicola (Flot.) Vainio. Crystalline outcrop, mile 39.8 S, *8325* (p.p.).

Cladonia amaurocraea (Flk.) Schaer. Black spruce forest, mile 53, *4954;* jack pine forest on sandy knoll, mile 123.4 N, *8065*.

Cladonia coccifera (L.) Willd. Jack pine forest on sandy knoll, mile 123.4 N, *8067*.

Cladonia cornuta (L.) Schaer. Spruce forest, mile 125.1 N, *8038;* crystalline outcrop, mile 39.8 S, *8325* (p.p.).

Cladonia degenerans (Flk.) Spreng. Crystalline outcrop, mile 39.8 S, *8325* (p.p.).

Cladonia gonecha (Ach.) Asahina. Spruce forest, mile 125.1 N, *8039;* jack pine forest on sandy knoll, mile 123.4 N, *8068*.

Cladonia gracilis (L.) Willd. var. *dilatata* (Hoffm.) Schaer. Jack pine forest on sandy knoll, mile 123.4 N, *8069*.

Cladonia metacorallifera Asahina. Crystalline outcrop, mile 39.8 S, *8325* (p.p.).

Cladonia mitis Sandst. Frequent in spruce or pine forests and on limestone and crystalline outcrops. Mile 12, *4869;* mile 123.4 N, *8062;* mile 43.7 S, *8315*.

Cladonia pyxidata (L.) Hoffm. var. *neglecta* (Flk.) Mass. Jack pine forest on sandy knoll, mile 123.4 N, *8069;* crystalline outcrop, mile 39.8 S. *8325* (p.p.).

Cladonia rangiferina (L.) Web. Frequent to common as a ground cover in spruce or pine forests; frequent on limestone and crystalline outcrops. Mile 12, *4868;* mile 125.1 N, *8051;* mile 39.8 S, *8327*.

Cladonia sylvatica (L.) Harm. Abundant as a ground cover in a spruce forest, Kakisa Road, *4516*.

Cladonia uncialis (L.) Web. Jack pine forest on sandy knoll, mile 123.4 N, *8063;* crystalline outcrop, mile 43.7 S, *8316*.

Cladonia verticillata (Hoffm.) Schaer. Crystalline outcrop, mile 39.8 S, *8325* (p.p.).

Stereocaulon tomentosum E. Fr. Spruce forest, mile 125.1 N, *8024*.

GYROPHORACEAE

Actinogyra muhlenbergii (Ach.) Schol. Common on crystalline outcrops. Mile 43.7 S, *8318*.

Lasallia pensylvanica (Hoffm.) Llano. Common on crystalline outcrops. Mile 43.7 S, *8319*.

LECANORACEAE

Ochrolechia inaequatula (Nyl.) Zahlbr. Limestone outcrop, mile 127 N, *8292*.

PARMELIACEAE

Cetraria crispa (Ach.) Nyl. Black spruce forest, mile 112.2 N, *8125;* jack pine forest on sandy knoll, mile 123.4 N, *8066*.

Cetraria culcullata (Bell.) Ach. Spruce forest, mile 125.1 N, *8030.*

Cetraria islandica (L.) Ach. Spruce forest, mile 125.1 N, *8040.*

Cetraria nivalis (L.) Ach. Frequent to common in spruce or pine forests and on limestone and crystalline outcrops. Mile 12, *4870;* mile 123.4 N, *8055;* mile 39.8 S, *8317.*

Cetraria tilesii Ach. Rare on limestone outcrops. Mile 22.7, *5176;* mile 127 N, *8290.*

Parmelia centrifuga (L.) Ach. Crystalline outcrop, mile 43.7 S, *8320.*

Parmelia stenophylla (Ach.) Hueg. Crystalline outcrop, mile 39.8 S, *8323.*

Parmelia sulcata Tayl. Crystalline outcrop, mile 39.8 S, *8322.*

USNEACEAE

Evernia mesomorpha Nyl. Common on bark of birches in spruce forest, mile 125.1 N, *8027.*

Thamnolia vermicularis (Sw.) Ach. Limestone outcrop, mile 127 N, *8296.*

Usnea comosa (Ach.) Röhl. Common on bark of birches in spruce forest, mile 125.1 N. *8026.*

CALOPLACACEAE

Caloplaca elegans (Link) T. Fr. Limestone outcrop, mile 127 N, *8299.*

BUELLIACEAE

Buellia papillata (Somerf.) Tuck. Limestone outcrop, mile 127 N, *8294.*

PHYSCIACEAE

Physcia muscigena (Ach.) Nyl. Spruce forest, mile 125.1 N, *8025;* limestone outcrop, mile 127 N, *8291.*

BRYOPHYTES

SPHAGNACEAE

Sphagnum balticum Russ. On sedge mats around muck bottom lakes. Mile 57.6 S, *7247.*

Sphagnum capillaceum (Weiss) Schrank var. *tenellum* (Schimp.) Andrews. Black spruce forest, mile 59.8 S, *6763.*

Sphagnum cuspidatum Ehrh. In shallow water on sedge mats and in forest pools. Mile 59.8 S, *6764.*

Sphagnum fuscum (Schimp.) H. Klinggr. Apparently the most common *Sphagnum* in the region. Usually found in hummocks in forests, principally of black spruce, where it may be the main ground cover. Mile 53, *4951;* mile 59.8 S, *6762;* mile 36 N, *7541.*

Sphagnum girgensohnii Russ. Black spruce forest, mile 126 N, *9141a.*

Sphagnum riparium Angstr. In *Ledum* muskeg, mile 44.8 S, *7222.*

Sphagnum squarrosum Pers. ex. Crome. Black spruce forest, mile 126 N, *9141.*

Sphagnum warnstorfianum DuRietz. Occasional to common, forming mounds or mats in black spruce forests and in wet muskegs. Mile 52, *5370;* mile 44.8 S, *7223;* mile 36 N, *7540.*

POLYTRICHACEAE

Polytrichum formosum Hedw. In depressions on crystalline outcrops, where it forms mats on thin soil. Mile 39 S, *7934.*

Polytrichum juniperinum Hedw. Disturbed soil, Kakisa Road, *5359;* crystalline outcrop, mile 11.5 S, *6713.*

Polytrichum juniperinum Hedw. var. *alpestre* (Hoppe) BSG. Spruce forest, Kakisa Road, *4557;* disturbed soil, mile 81.5 N, *6887.*

Polytrichum piliferum Hedw. In peaty depressions on crystalline outcrops. Mile 14.5 S, *7152.*

DITRICHACEAE

Ceratodon purpureus (Hedw.) Brid. Disturbed soil, mile 4.2 N, *6625.*

Ditrichum flexicaule (Schwaegr.) Hampe. Limestone outcrops, mile 22.7, *5176a,* mile 127 N, *8297;* spruce forest, Kakisa Road, *4763;* shrub zone around marly lake, mile 64, *6051.*

DICRANACEAE

Dicranum bergeri Bland. Shrub zone around a marly lake, mile 64, *6052;* spruce forest, mile 125.1 N, *8034.*

GRIMMIACEAE

Hedwigia ciliata (Hedw.) P.-B. Crystalline outcrop, mile 27.7 S, *7204.*

AULACOMNIACEAE

Aulacomnium acuminatum (Lindb. et Arn.) Par. Frequent to common as a ground cover in spruce forests. Kakisa Road, *5351;* mile 65.8 S, *7990.*

Aulacomnium palustre (Hedw.) Schwaegr. Frequent in spruce forests, where it may be important as a ground cover. Mile 27.7, *4936.*

Aulacomnium turgidum (Wahl. ex Web. et Mohr) Schwaegr. Limestone outcrop, mile 128 N, *6788;* crystalline outcrop, mile 8.3 S, *7134.*

MEESIACEAE

Meesia tristicha BSG. In sedge mat around lake, mile 47.2 S, *4957.*

Paludella squarrosa (Hedw.) Brid. White spruce forest, mile 62.8 S, *7979.*

BRYACEAE

Brynum lacustre Bland. Marl deposit, mile 110.5 N, *6837.*

Leptobryum pyriforme (Hedw.) Schimp. Disturbed soil, mile 2.5 S, *6672.*

HYPNACEAE

Campylium stellatum (Hedw.) Lange et C. Jens. Black spruce forests, mile 44.5, *5122*, mile 115 N, *8284;* sedge mat and shallow water of marly lake, mile 63, *5299*.

Drepanocladus aduncus (Hedw.) Warnst. var. *polycarpus* (Bland. ex Voit) Warnst. Sedge meadow, mile 23.2 S, *7906*.

Drepanocladus capillifolius (Warnst.) Warnst. In muck and shallow water of lake, mile 20.5 S, *7175;* sedge meadow, mile 11.4 S, *7833*.

Drepanocladus exannulatus (BSG) Warnst. In sedge mats and in shallow water of muck bottom lakes. Mile 44.8 S, *7218*.

Drepanocladus fluitans (Hedw.) Warnst. Shallow pool in black spruce forest, mile 59.8 S, *6765;* among rocks in shallow water, Mackenzie River, *7460*.

Drepanocladus vernicosus (Lindb.) Warnst. Shallow water of marly lake, mile 40.5, *5425*.

Hylocomium splendens (Hedw.) BSG. The common "feather moss" of the region. Especially abundant in rich white spruce forests, where it forms a dense carpet on the floor, as it may do also in certain black spruce forests. Characteristic of more mesophytic forests of jack pine, where it occurs in scattered patches. Mile 33.5, *5990;* mile 42.5 N, *6918;* mile 65.8 S, *7986*.

Hypnum bambergeri Schimp. Black spruce forest, mile 72 N, *7651*.

Scorpidium scorpioides (Hedw.) Limpr. Shallow water of marly lake, mile 54, *5079*.

Tomenthypnum nitens (Hedw.) Loeske. Frequent to common in white or black spruce forests, where it is a characteristic ground cover. Mile 66, *5268;* mile 42.5 N, *6923;* mile 62.8 S, *7979*.

THUIDIACEAE

Abietinella abietina (Hedw.) Fl. In moss mat on limestone slab, mile 128 N, *6779*.

FONTINALACEAE

Fontinalis duriaei Schimp. On rocks in boulder rapids, Kakisa River, *5701*.

PLAGIOCHILACEAE

Mylia anomala (Hook.) S. F. Gray. Among *Sphagnum fuscum* in forests, mile 113.5 N, *6822*, mile 45 S, *7941*.

PTILIDIACEAE

Ptilidium ciliare (L.) Nees. Among *Dicranum bergeri* in spruce forests, mile 125.1 N, *8035*.

MARCHANTIACEAE

Marchantia polymorpha L. Edge of roadside pool, mile 61.2 N, *7604*.

RICCIACEAE

Ricciocarpus natans (L.) Corda. In shallow water among *Carex*, Mackenzie River, *5995*, and among *Lemna minor* in small pond, mile 26 S, *9276*.

VASCULAR PLANTS

EQUISETACEAE

Equisetum arvense L. Infrequent along shores and in moist forests; locally common in disturbed areas. Kakisa River, *4539;* mile 2.5 S, *6673;* mile 24 N, *7437*.

Equisetum fluviatile L. Infrequent in shallow water, in marshes, in sedge mats, and on shores. Mackenzie River, *4239;* Kakisa Lake, *4898;* mile 85 N, *6880;* mile 3.6 S, *7798*.

Equisetum palustre L. Infrequent along shores, in shallow water, and in black spruce forests; locally frequent in disturbed areas. Mile 44, *4299;* mile 119 N, *7747a;* mile 66 S, *8019*.

Equisetum scirpoides Michx. Infrequent in sandy soil or moss mats in forests of pine or spruce; locally common in disturbed soil. Mile 123.4 N, 7294; Enterprise, 9051.

Equisetum sylvaticum L. Infrequent in peaty soil or in moss mats in moist forests, especially of black spruce; locally frequent in disturbed soil. Kakisa Road, *4508;* mile 2.5 S, *6668*.

Equisetum variegatum Schleich. Seen only once, sandy-gravelly beach of Kakisa Lake near outlet, *6096*.

LYCOPODIACEAE

Lycopodium complanatum L. Rare in dry sandy soil in pine or spruce woods. Mile 11.5, *4835;* mile 59.3 S, *6747;* Prelude Lake, *9221*.

SELAGINELLACEAE

Selaginella selaginoides (L.) Link. Rare in muskeg forests and in shrub zones around marly lakes. Mile 57.5, *5217;* mile 119 N, *7740*.

ISOETACEAE

Isoetes echinospora Dur. var. *braunii* (Dur.) Engelm. Seen only once, in shallow water, sandy bouldery bottom, Prelude Lake, *9216*.

POLYPODIACEAE

Cryptogramma crispa (L.) R. Br. var. *acrostichoides* (R. Br.) Clarke. Infrequent in shallow soil or in crevices on rock outcrops, mainly crystalline but occasionally limestone. Mile 66 S, *7257;* Horseshoe Island, Yellowknife Bay, *9492*.

Cystopteris fragilis (L.) Bernh. Infrequent in crevices on limestone outcrops. Mile 15.5, *5153;* mile 66 S, *6778*.

Cystopteris montana (Lam.) Bernh. Seen only once, in a spruce-

feather moss forest on slope above Kakisa River 1.5 miles below Lady Evelyn Falls, *5350*.

Dryopteris robertiana (Hoffm.) Christensen. Seen only once, in crevices on face of limestone escarpment in white spruce forest, mile 15.5, *5156*.

Dryopteris fragrans (L.) Schott. Infrequent in crevices on crystalline outcrops. Of the collections made of this species, only *9178*, with its overlapping pinnae, approaches var. *fragrans;* the others are clearly var. *remotiuscula* Kom. Yellowknife, *9178;* mile 16 S, *9296*.

Polypodium virginianum L. Infrequent in crevices on rock outcrops, mainly crystalline but occasionally limestone. Mile 2.7 S, *6692;* mile 66 S, *7258*.

Woodsia glabella R. Br. Infrequent in crevices on limestone outcrops. Mile 26, *4336;* mile 66 S, *6775*.

Woodsia ilvensis (L.) R. Br. Frequent in rock crevices, especially on crystalline outcrops, but also on limestone. Mile 2.7 S, *6688;* mile 66 S, *7259*.

PINACEAE

Juniperus communis L. var. *depressa* Pursh. (N) Frequent in a variety of habitats, including rocky slopes, forests of most kinds, and rock outcrops (both crystalline and limestone). Although occasionally almost prostrate, common juniper usually assumes the form of a spreading decumbent shrub between 1 and 3 feet tall. The branches typically recline for about half their length and then ascend. The reclining portion of the branches usually roots. This plant is most characteristic, perhaps, of jack pine forests on sandy knolls and limestone outcrops, where it forms a distinct low-shrub stratum. Mile 70, *4246;* mile 2.7 S, *6686;* mile 96.7 N, *7699*.

Juniperus horizontalis Moench. (Ch) Frequent in a variety of habitats, including rocky slopes, forests of most kinds, and, most commonly, rock outcrops (both crystalline and limestone). Stems prostrate, to at least 20 feet long and 1.7 inch in diameter. Creeping juniper exists along the highway in two strikingly distinct forms, glaucous and green. These forms are most effectively contrasted where they grow together, as on the limestone outcrops at mile 26-28. Here, the elongate branches of many plants criss-cross each other, forming in many spots a distinctive reticulate pattern on the rock. Mile 36, *4610;* mile 96.5 N, *6868;* Yellowknife, *9187*.

Larix laricina (Du Roi) K. Koch. (Ms) Frequent in muskeg forests, although seldom forming pure stands of any extent. Larch is most commonly found in moist to wet areas, but it occasionally occurs in seemingly xeric habitats, such as atop crystalline outcrops, where it grows in crevices. The maturing cones are magenta and glaucous. Larch is the least common of the gymnospermous trees in the highway region. Trees between 26 and 32 feet tall and 3.3 to 4.9 inches DBH were found to have 24 to 29 annual rings. Mile 64, *6059;* mile 2.5 S, *6676;* mile 26.5 N, *7519*.

Picea glauca (Moench) Voss. (Mg) Common to abundant in white spruce and more mesic jack pine forests; frequent on sand plains and on rock outcrops (both crystalline and limestone). White spruce is the commonest tree on mesic sites. The largest specimen observed, in the gorge of Kakisa River about ½ mile below Lady Evelyn Falls, was 28.1 inches DBH and an estimated 129 feet tall. It showed 183 annual rings. The other tall white spruces measured by us did not exceed 67 feet in height and 15.7 inches DBH and did not show more than 91 annual rings; most were appreciably smaller and younger than this. Mile 65, *6048;* mile 74 N, *6894;* Yellowknife, *9183*.

Picea mariana (Mill.) BSP. (Ms) Common to abundant in black spruce forests; occasional on crystalline outcrops and on sand plains and ridges. Black spruce, the commonest tree in hydric sites, seldom exceeds 6 inches in diameter and 40 feet in height, and is commonly of much less stature than this. The largest tree seen by us was 9.8 inches DBH and 63 feet tall and showed 160 annual rings. Black spruce is the slowest growing tree in the highway region. A specimen 7 inches DBH and 34 feet tall showed about 212 annual rings; one 4.5 inches DBH and 31 feet tall showed about 190; one 4.3 inches DBH and 27 feet tall showed about 178; and one 3.3 inches DBH and 18 feet tall showed 56. Kakisa Road, *4576;* mile 2.5 S, *6677*.

Pinus banksiana Lamb. (Ms) Characteristic tree of sandy knolls, sand plains, and rock outcrops (both crystalline and limestone). Although most commonly found in these rather xeric habitats, jack pine can occur in many other habitats, some of them seemingly far from being xeric, such as floating "islands" in marly lakes. This species appears to reach its best development in the highway region in the open, park-like stands between miles 95 N and 130 N, where magnificent open-grown pines occur. Here are low branched trees up to 64 feet tall, 15.7 inches DBH, and 130 years old. Mile 11.5, *4833;* mile 101.1 N, *7082*.

TYPHACEAE

Typha latifolia L. (HH) Infrequent in wet places or shallow water. Most commonly observed in disturbed areas, especially roadside ditches; only infrequently seen in undisturbed areas. In a few sites cattail is a contributor to the mat around lakes in the Canadian Shield section. Mile 1, *5553;* mile 61.2 N, *7594;* mile 6.8 S, 7815.

SPARGANIACEAE

Sparganium angustifolium Michx. (incl. *S. multipeduncalatum* [Morong] Rydb.) (HH) infrequent in mud or muck of shores or roadside ditches or in still or flowing water to about 2 feet deep. As represented in our region, *S. angustifolium* is a highly polymorphic species. In the same colony can be found leaves varying from 3 to 25

mm. wide; generally the plants growing in the deepest water have the narrowest leaves. Leaves are commonly flat in the upper half and convex on the back in the lower half. Foliar characteristics and others, including size and number of pistillate heads and length of stigma, frequently used to distinguish *S. augustifolium* from *S. multipedunculatum*, appear to break down in our northern material, a conclusion reached also by Hulten (1941-1950) and Anderson (1959). Kakisa River, *5710;* mile 7.7 S, *7818;* mile 12 N, *8253.*

Sparganium minimum (Hartm.) Fries. (HH) Infrequent in mud or muck of shores or roadside ditches or in still or flowing water to about 1.5 feet deep. The material I refer to this species is rather variable but it surely represents only one taxon. Most specimens have 1, 2, or 3 pistillate heads, but a few have 4 or even 5. The mature heads vary in diameter from 8 to 12 mm. In about half the plants observed, all the pistillate heads are sessile, but in the others the lowest head(s) are peduncled, with peduncles to 23 mm. long. The peduncles are usually axillary, but occasionally one is clearly supra-axillary. The peduncle of the staminate head varies from 3 to 18 mm. long. Mile 50, *5717;* mile 30 S, *9270.*

ZOSTERACEAE

Potamogeton alpinus Balbis var. *tenuifolius* (Raf.) Ogden. (HH) Rare in still water to at least 1.5 feet deep, clay or muck bottom. Noted only in Canadian Shield section. Mile 9.7 S, *7823.*

Potamogeton filiformis Pers. (HH) Infrequent in still or flowing water to at least 1.5 feet deep, gravel, marl, or clay bottom. Numbers *7637* and *7814,* cited below, represent var. *borealis* (Raf.) St. John; *9061,* with leaves about 1 mm. wide, is best referred to var. *macounii* Morong. Mile 23.5, *9061;* mile 68.2 N, *7637;* mile 6.8 S, *7814.*

Potamogeton foliosus Raf. var. *macellus* Fern. (HH) Rare in shallow still water, clay or muck bottom. Noted only in Canadian Shield section. Mile 38.3 S, *8356.*

Potamogeton friesii Rupr. (HH) Rare in shallow still water, clay or muck bottom. Noted only in Canadian Shield section. Mile 12.7 S, *7858.*

Potamogeton gramineus L. (HH) Frequent in still or flowing water to at least 2 feet deep, gravel, clay, or muck bottom. On the specimens cited below, *5702* clearly is var. *maximus* Morong; *8372* is var. *gramineus;* and *8307* is intermediate in leaf characteristics between these varieties. Kakisa River, *5702;* Stagg River, *8307;* mile 54.4 S, *8372.*

Potamogeton pectinatus L. (HH) Seen only once, among boulders in shallow water of Mackenzie River at Fort Providence, *4232.*

Potamogeton pusillus L. (HH) Infrequent in still or flowing water to at least 2 feet deep, clay or muck bottom. Noted only in Canadian Shield section. Mile 7.7 S, *7816.*

Potamogeton richardsonii (Benn.) Rydb. (HH) Infrequent in still or flowing water to at least 4 feet deep, gravel, clay, or muck bottom. Kakisa Lake, *5633;* mile 12 N, *8252;* mile 49 S, *8306.*

Potamogeton vaginatus Turcz. (HH) Rare in still or flowing water to at least 1.5 feet deep, gravel or sand bottom. Kakisa Lake, *4615;* Yellowknife, *9172.*

Potamogeton zosteriformis Fern. (HH) Rare in still water to at least 3 feet deep, muck bottom. Noted only in Canadian Shield section. Mile 36.4 S, *8351.*

JUNCAGINACEAE

Triglochin maritima L. (Hrr) Infrequent along rocky or sandy shores, in marshy areas, in marl deposits, and in sedge mats and shallow water around marly lakes. Mackenzie River, *4134;* mile 66, *4260;* mile 72 N, *7033;* Prosperous Lake, *9196.*

Triglochin palustris L. (Hrr) Infrequent along rocky or sandy shores, in marshy areas, in marl deposits, in sedge mats and shallow water around marly lakes, and in spruce forests. Kakisa River, *4276;* mile 72 N, *7036;* Yellowknife, *8342.*

ALISMATACEAE

Sagittaria cuneata Sheld. (HH) Infrequent in water to 1.5 feet deep, and along shores in sandy, gravelly, clayey, or mucky soil. A highly polymorphic species. In relatively deep water, the petioles and peduncles may be 20 to 24 inches long, and the leaf blades typically are floating. In shallow water and on shores, the petioles and peduncles seldom exceed 6 to 8 inches in length, and the leaf blades are erect. Kakisa Lake, *5659;* mile 49 S, *7959.*

GRAMINEAE

Agropyron cristatum Gaertn. (Hs) Seen only once, in disturbed soil, Fort Providence, *9075a.*

Agropyron latiglume (Scribn. et Sm.) Rydb. (Hs) Seen only once, in disturbed soil, mile 59, *6073.*

Agropyron repens (L.) Beauv. (Grh) Seen only once, in weedy area, Yellowknife, *7777.*

Agropyron trachycaulum (Link) Malte. (Hs) Infrequent to common along sandy or clay shores, in shallow residual soil on limestone outcrops, and in disturbed soil. Dominant, with *Muhlenbergia richardsonis, Carex atherodes,* and *Calamagrostis neglecta,* in drier grasslands near Fort Providence. *Agropyron trachycalum,* in the highway region, exists in four varieties that intergrade in morphology and that frequently occur in the same habitat. Of the collections cited below, *4229* and *5747* appear closest to var. *trachycaulum; 4136, 4308, 6093,* and *7063* are var. *novae-angliae* (Scribn.) Fern.; *4137, 7992, and 8224* are var. *glaucum* (Pease et Moore) Malte; and *7471* is best referred to var. *unilaterale* (Cassidy) Malte. Mile 17 N, *4136, 4137;* Fort Providence, *4229;* mile 41, *4308;* mile

24, *5631, 5632;* Kakisa River, *5747, 6093;* mile 86.7 N, *7063;* mile 10 N, *7471;* mile 66 S, *7992;* Mackenzie River, *8224.*

Agrostis scabra Willd. (Hs) Infrequent on outcrops, both crystalline and limestone, in marl deposits, and along mucky, marly, or sandy shores, becoming frequent to common in disturbed areas. Mile 66, *5235;* mile 66 S, *7262;* mile 110 N, *7299.*

Alopecrus aequalis Sobol. (Hs) Rare in marshes, in sedge mats around muck-bottom lakes, and along clay, gravelly, sandy, or mucky shores; becoming frequent in disturbed areas. Fort Providence, *5041;* mile 23.5, *5777;* mile 82 N, *7053;* mile 16.5 S, *7878.*

Arctagrostis latifolia (R. Br.) Griseb. (Incl. *A. arundinacea* [Trin.] Beal) (Hsr) Local in disturbed soil along highway; seen only once in an undisturbed habitat, a white spruce forest above shore of Great Slave Lake, mile 62.8 S, *7978.* Mile 7.5 N, *4215;* mile 33, *4319.*

Beckmannia syzigachne (Steud.) Fern. (Th) Rare on gravelly, muddy, or sandy shores and in marshes, becoming frequent in disturbed areas. Mile 11 N, *4223;* Kakisa River, *5210;* Prosperous Lake, *9223.*

Bromus inermis L. (Hsr) Seen only once, along Mackenzie Highway 4 miles south of Hay River, *5536.*

Bromus pumpellianus Scribn. (Hsr) Rare in dry sandy soil in pine or spruce woods and along rocky shores. Numbers *4234* and *7309* are notable for the length (up to 4.5 cm.) of their spikelets. Fort Providence, *4234;* mile 46, *5404;* mile 66 S, *7287;* mile 110 N, *7309.*

Calamagrostis. My collections of *Calamagrostis* from the highway region total 174 numbers (including many mass collections). Many are readily referrable to *C. canadensis* (Michx.) Beauv.,*C. inexpansa* Gray, *C. lapponica* (Wahl.) Hartm., *C. neglecta* (Ehrh.) Gaertn., or *C. purpurascens* R. Br. Many others cannot be convincingly referred to any of these species but appear to be intermediates. The specimens are discouragingly variable in those characteristics commonly regarded as diagnostic in *Calamagrostis.* I plan to present, in a separate paper, an analysis of this variation.

Deschampsia cespitosa (L.) Beauv. (Hs) Infrequent on rocky or sandy shores, in shallow residual soil over limestone, and in marl deposits. Kakisa River, *4014;* mile 110 N, *7306;* mile 64.6 S, *8379.*

Elymus canadensis L. (Hs) Seen only once, on gravelly shore of Hay River near mile 49 of Mackenzie Highway, *6167.*

Elymus innovatus Beal. (Hsr) Infrequent to rare in sand or in moss mats in white spruce or jack pine forests, becoming frequent in disturbed areas. Fort Providence, *5045;* mile 52, *5099;* mile 103.2 N, *7342.*

Festuca rubra L. (Hsr) Seen only once, in disturbed clay, mile 21.5 N, *6969.*

Festuca saximontana Rydb. (Hs) Infrequent in dry sandy soil, especially in pine or spruce woods, in shallow residual soil over limestone, and on crystalline outcrops, becoming frequent in disturbed areas. Mile 22.7, *5174;* mile 70.5 N, *6906;* mile 6.1 S, *7125.*

Glyceria borealis (Nash) Batch. (Hsr) Rare on muddy or sandy shores or in shallow water. Seen only in Canadian Shield section. Mile 20.5 S, *7893.*

Glyceria grandis Wats. (Hsr) Rare along muddy, sandy, or mucky shores or in shallow water. Kakisa River, *5711;* mile 20.5 S, *7900;* mile 126 N, *9139.*

Glyceria pulchella (Torr.) Trin. (Hsr) Infrequent along muddy, sandy, or mucky shores; locally abundant in marshes. Four miles northeast of Fort Providence, *4123;* mile 56, *5011;* mile 26.9 S, *7911.*

Glyceria striata (Lam.) Hitchc. (Hsr) Rare along muddy, sandy, or peaty shores. Mile 13, *5588;* mile 66 S, *8021.*

Helictotrichon hookeri (Scribn.) Henr. (Hs) Rare in shallow residual soil over limestone. Noted only south of the Mackenzie River. Mile 22.7, *5161.*

Hierochloe odorata (L.) Beauv. (Hsr) Infrequent along shores or in shallow residual soil on limestone outcrops. Kakisa River, *4730;* mile 39.7 N, *6993a.*

Hordeum jubatum L. (Hs) Infrequent in drier grasslands, on rocky shores, and in marl deposits, becoming locally frequent to common in disturbed areas. Mile 17 N, *4143;* mile 66, *5256;* mile 23.5 S, *7190.*

Koeleria cristata (L.) Pers. (Hs) Infrequent to rare in shallow residual soil over limestone. Noted only south of the Mackenzie River. Mile 28.5, *4919.*

Muhlenbergia glomerata (Willd.) Trin. var. *cinnoides* (Link) Herm. (Hsr) Rare in marl deposits or in sedge mats around marly lakes, usually growing on ant hills. Noted only south of the Mackenzie River. Mile 50, *5718.*

Muhlenbergia richardsonis (Trin.) Rydb. (Hsr) Rare on rocky shores, in shrub zones around marly lakes, and in limestone crevices; common in prairies northeast of Fort Providence, where it may be co-dominant with *Agropyron trachycaulum.* Mile 17 N, *4191;* mile 50, *5397.*

Oryzopsis asperifolia Michx. (Hs) Rare in dry peaty or sandy soil in woods, especially jack pine or white spruce. Noted only south of the Mackenzie River. Kakisa River, *4741.*

Oryzopsis pungens (Torr.) Hitchc. (Hs) Infrequent in sandy or dry peaty soil in pine or spruce woods and in shallow residual soil over limestone. Mile 33, *4318;* mile 103.5 N, *6850.*

Phalaris arundinacea L. (Grh) Infrequent along rocky or marly shores and in marl deposits. Number *9450* is notable for the length—up to 29.5 cm.—of its panicles. Mackenzie River, *4233;* mile 59.5 N, *7378;* Kakisa River, *9450.*

Phalaris canariensis L. (Th) Seen only once, disturbed soil, mile 3 N, *9434* (in herb. DAO).

Phleum pratense L. (Hs) Rare in disturbed soil. Kakisa River, *5474;* mile 21.5 N, *7503.*

Poa. The genus *Poa* is represented in the highway region by at least the following species: *P. alpina* L., *P. glauca* Vahl, *P. interior* Rydb., *P. leptocoma* Trin., *P. palustris* L., *P. pratensis* L., and *P. stenantha* Rydb. My collections total 114 numbers. They will be reported on in a separate paper.

Puccinellia distans (L.) Parl. (Hs) Seen only twice, disturbed soil, mile 16 S, *7154,* and sandy shore of Prosperous Lake, *9198.*

Puccinellia nuttalliana (Schultes) Hitchc. (Hs) Rare in marl deposits, becoming frequent in disturbed areas. Enterprise, *3898;* mile 39.7 N, *7401.*

Scolochloa festucacea (Willd.) Link. (Hsr) Locally frequent to common or even dominant in marshes, in marl deposits, and on marly shores. Four miles northeast of Fort Providence, *4065;* mile 39.7 N, *7553;* mile 67.7 N, *7627.*

Sphenopholis intermedia (Rydb.) Rydb. (Hs) Rare along sandy rocky shores and in disturbed areas. Mile 0.5, *5939;* Mackenzie River, *6001.*

Trisetum spicatum (L.) Richt. (Hs) Rare in shallow residual soil or in crevices on limestone outcrops, and in sandy soil in pine woods. Mile 23.5, *5134;* mile 110 N, *7304.*

CYPERACEAE

Carex aenea Fern. (Hs) Frequent to common in disturbed soils, especially sand; rare in seemingly undisturbed sand in jack pine woods and in peaty depressions on crystalline outcrops. Mile 50, *5111;* mile 110 N, *7298;* mile 1.8 S, *7784.*

Carex aquatilis Wahl. (Grh [HH]) Frequent to abundant in shallow water and on shores, in marl deposits, and in sedge mats; rare in moss and lichen mats on limestone and in spruce forests. This, the commonest sedge of the highway region, in co-dominant with *Carex atherodes* and *Scolochloa festucacea* in the extensive marshes north of Fort Providence. It is an important contributor to the sedge mats around both marly and muck bottom lakes. Four miles northeast of Fort Providence, *4029;* Kakisa Lake, *4651;* mile 59.5 N, *7377;* mile 7 S, *9248.*

Carex atherodes Spreng. (Grh [HH]) Frequent to abundant in shallow water and on shores in marl deposits, and in prairies. *Carex atherodes* is a co-dominant species, with *Carex aquatilis* and *Scolochloa,* in the extensive marshes north of Fort Providence, and, in the same area, is co-dominant in prairies with *Calamagrostis neglecta* and *Agropyron trachycaulum.* Four miles northeast of Fort Providence, *4027;* mile 72 N, *8269.*

Carex aurea Nutt. (Grh) Local, mostly in disturbed damp sandy, peaty, or clay soil; occurring also on marly shores and in grasslands. Kakisa River, *5339;* mile 65.6 N, *7615.*

Carex bebbii Olney. (Hs) Infrequent in residual soil over limestone and in disturbed sandy or peaty soil. Kakisa River, *5332.*

Carex buxbaumii Wahl. (Hsr [HH]) Infrequent to abundant in sedge mats, in marl deposits, and in disturbed peaty soil; noted once in a black spruce-*Hylocomium splendens* forest. *Carex buxbaumii* is, in places, an important contributor to the mat around marly lakes. Its rhizomes often extend 2 to 3 feet into open water beyond the edge of the mat. Mile 66, *4258;* mile 28.5 N, *7430.*

Carex canescens L. (Hs) Local in disturbed soil at roadside, on sedge mats and shores of muck bottom lakes, and on crystalline and limestone outcrops. Much of the material I refer here is seemingly transitional to *Carex brunnescens* (Pers.) Poir. Mile 46.6 S, *7225;* mile 35 N, *7537.*

Carex capillaris L. (Hs) Infrequent to rare on hummocks in marshes, in marl deposits, in sedge mats, in moss mats in black spruce forests, and in disturbed soil. Mile 56, *4789;* mile 110 N, *7318.*

Carex capitata L. (Hsr) Infrequent to rare in spruce-feather moss forests and in disturbed sandy, peaty, or clayey soil. Kakisa River, *4545;* mile 42.5 N, *6920;* mile 66 S, *7267.*

Carex chordorrhiza L. f. (Hsr [Ch])Rare on crystalline outcrops, where it grows in shallow peaty depressions. It rhizomes may extend out from the depression several feet over bare rock. The internodes of these "stolons" are up to 6 cm. long, and from the nodes arise leaves and flowering culms—but no roots. The "stolons" survive the winter and continue growth in length the following spring, evidencing typically chamaephytic behavior. Mile 4.7 S, *6702.*

Carex concinna R. Br. (Hsr) Infrequent to rare in moss mats in spruce forests, in shallow residual soil over limestone, in marl deposits, in grassy openings in woods, and in disturbed sandy soil. The plants are most robust in disturbed areas. The culms, especially of more vigorous plants, may bend over gracefully so that the spikes touch the ground. Kakisa River, *4522;* mile 110.5 N, *6835.*

Carex crawfordii Fern. (Hs) Seen only once, in disturbed sandy soil along road to ford over Kakisa River, *4287.*

Carex deflexa Hornem. (Hsr) Rare; observed only in disturbed situations, either sandy or peaty soil. Kakisa Road, *4514;* mile 8.3 S, *7129;* mile 110 N, *7302.*

Carex diandra Schr. (Hs) Infrequent in sedge mats around both marly and muck bottom lakes, and in marl and muck deposits. Mile 63, *5292;* mile 16.2 S, *7171.*

Carex disperma Dewey. (Grh) Infrequent to rare in marshy areas and in disturbed sandy, peaty, or clay soil. Kakisa Lake, *4627;* mile 32 N, *6975;* mile 46.6 S, *7227.*

Carex eburnea Boott. (Grh) Rare in crevices of shaded limestone outcrops. Mile 26, *4340;* mile 124.5 N, *7289.*

Carex foenea Willd. (Grh) Local in sand in dry situations, usually in

pine woods; also in disturbed sand at roadside. Mile 110 N, *7301;* Yellowknife, *7775.*

Carex garberi Fern. (Grh) Infrequent along rocky or marly shores, in marl deposits, and in disturbed loam or peat soils. Mile 7, *4807;* Mackenzie River, *7458;* mile 110.5 N, *7735.*

Carex glacialis Mack. (Hs) Seen only once, in crevices in limestone cliff, mile 66 S, *7286.*

Carex gynocrates Wormsk. (Grh) Infrequent in moss mats in spruce forests and in disturbed peaty soil adjacent to these forests. Kakisa River, *5343;* mile 72 N, *7027.*

Carex interior Bailey. (Hsr) Seen only once, in sedge mat around marly lake, mile 61, *5276.*

Carex lasiocarpa Ehrh. (Grh [HH]) Infrequent to common along shores, in sedge mats around both marly and muck bottom lakes, in shallow water, and in disturbed peaty soil. *Carex lasiocarpa* is an important contributor, in places, to sedge mats. Of the collections cited below, *7459* represents var. *latifolia* (Böck.) Gleason (*Carex lanuginosa* Michx.); the others are var. *americana* Fern. Mile 44, *4303;* Mackenzie River, *7459;* mile 6 S, *7810a.*

Carex leptalea Wahl. (Hsr) Infrequent to rare in hummocks in marshes, persisting and becoming locally frequent in disturbed gravelly or peaty soil. Mile 56, *4790;* mile 35 N, *7539.*

Carex limosa L. (Grh [HH]) Rare to frequent in sedge mats around both marly and muck bottom lakes; sometimes also in shallow water beyond edge of mat. Mile 61, *5280;* mile 44.8 S, *7219.*

Carex media R. Br. (Hs) Rare in spruce-feather moss forests, becoming somewhat more common in disturbed soil. Mile 66, *5245;* mile 32 N, *6976,* mile 4.8 S, *7117.*

Carex paupercula Michx. var. *pallens* Fern. (Hs) Seen only once, on muck bottom of drained lake, mile 20.5 S, *7174.*

Carex physocarpa Presl. (Grh [HH]) Infrequent in marl deposits, in shallow water of marly lakes, and in marshes. Mile 66, *4256;* mile 41.3 N, *7003.*

Carex praticola Rydb. (Hs) Infrequent in *Calamagrostis* or *Agrophyron-Muhlenbergia* prairies northeast of Fort Providence, spreading to disturbed soil at roadside. Mile 17 N, *4202.*

Carex raymondii Calder. (Hs) Rare; seen only in disturbed soil. Mile 0.5, *5548;* mile 26.5 N, *7521.*

Carex rossii Boott. (Hs) Rare; seen only in disturbed soil. Mile 28.5, *4918;* mile 41.3 N, *7001.*

Carex rostrata Stokes. (Grh [HH]) Frequent to abundant in shallow water, marshes, along shores, in sedge mats, and in roadside ditches. This species is occasionally dominant in marshes and sedge mats. Mile 44, *4304;* mile 24 N, *7434;* mile 9.6 S, *7821.*

Carex sartwellii Dewey. (Grh) Seen at only three stations: in disturbed peaty soil, mile 18, *5600;* in marl deposit, mile 39.7 N, *7398;* in disturbed clay, mile 21.5 N, *7496.*

Carex scirpoidea Michx. (Grh) Rare to frequent in moss mats in spruce forests, in shallow residual soil over limestone, in marl deposits, and on marly shores, persisting in disturbed areas. Not seen in Canadian Shield section. Mile 70, *4255;* mile 42.5 N, *6924.*

Carex supina Wahl. (Grh) Seen only twice: in peaty-sandy soil atop crystalline outcrop, 3.3 miles east northeast of Yellowknife, *9188;* in sand among jack pines, Yellowknife, *9240.*

Carex tenuiflora Wahl. (Hs) Rare along mucky shores and in disturbed soil in Canadian Shield section. Mile 14 S, *7142.*

Carex vaginata Tausch. (Grh) Infrequent to rare in spruce-feather moss forests and in birch thickets. Mile 70, *4250;* mile 42.5 N, *6917.*

Carex viridula Michx. (Hs) Rare in marl deposits or on marly or sandy shores. Mile 100.5 N, *7310;* mile 62, *9480;* Prelude Lake, *9220.*

Eleocharis acicularis (L.) R. et S. (Grh [HH]) Local, forming mats in shallow water or on wet shores, in clay, sand, or muck. Kakisa Lake, *5667;* mile 49 S, *7240;* Mackenzie River, *8217.*

Eleocharis palustris (L.) R. et S. (HH) Local in shallow water up to 1 foot deep or on wet shores. Kakisa Lake, *5663;* mile 73.7 N, *7662;* mile 5.7 S, *7806.*

Eleocharis pauciflora (Lightf.) Link var. *fernaldii* Svenson. (Gst) Local in wet marly soil or in sedge mats around marly lakes. Seen only along the Mackenzie River-Frank Channel section of the highway. Mile 65.6 N, *7613.*

Eriophorum angustifolium Honck. (Grh [HH]) Local and infrequent in marshes, in sedge mats and shallow water of marly lakes, and in peaty soil in depressions on crystalline outcrops. Kakisa Lake, *4679;* mile 4.2 N, *6613;* mile 40 S, *7215.*

Eriophorum brachyantherum Trautv. (Hs) Local in marshes, in wet spruce forests, and in peaty depressions on crystalline outcrops. Mile 43, *4307;* mile 4.7 S, *6699;* mile 78.3 N, *6892.*

Eriophorum chamissonis C. A. Mey. (Grh [HH]) Locally frequent to common in shallow water or sedge mats of marl or muck-bottom lakes, in marshes, and in disturbed wet soil. Mile 52, *5372;* mile 57.6 S, *7248.*

Eriophorum gracile Koch. (Grh [HH]) Rare on sedge mats or hummocks around muck-bottom lakes or in shallow water of these lakes. Seen only in the Canadian Shield section. Mile 35 S, *6741.*

Eriophorum spissum Fern. (Hs) Material seemingly best referrable here was collected once, in a peaty depression on crystalline outcrop, mile 47.9 S, *7235.*

Eriophorum viridi-carinatum (Engelm.) Fern. (Grh [HH]) Seen only once, in shallow water and sedge mat, marly lake, mile 50, *5385.*

Scirpus cespitosus L. var. *callosus* Bigel. (Hsr) Common in sedge mats and thickets around marly lakes; occasional in low spots in black spruce forests. This plant is frequently the dominant species in sedge mats, especially in firmer portions of the mat. Mile 63, *5298;* mile 113.5 N, *8113.*

Scirpus hudsonianus (Michx.) Fern. (Hs) Rare in marshes and birch thickets. Mile 86 N, *6878.*

Scirpus microcarpus Presl. (Hsr) Seen only once, at edge of sedge dominated island in Kakisa River 4 miles below highway bridge, *5678.*

Scirpus pumilus Vahl ssp. *rollandii* (Fern.) Raymond. (Grh) Seen only once, in marl deposit, mile 110.5 N, *7091.*

Scirpus validus Vahl. (HH) Infrequent along shores or in shallow water. The identity of our northern bulrush seems by no means certain. Many specimens are fairly "typical" *S. acutus;* many are fairly "typical" *S. validus* except that the scales may be conspicuously red-spotted. Between these extremes occur various intermediates. Until a more thorough study can be made of *Scirpus* section *Pterolepis* in the north, I prefer to call our material *S. validus,* the name by which all Mackenzie material has been known. Kakisa Lake, *5670;* mile 16.5 S, *7877;* mile 39.7 N, *8422.*

ARACEAE

Acorus calamus L. (HH) Seen only once, with *Potentilla palustris, Calla palustris,* and *Menyanthes trifoliata,* in the mat around a small lake, along road 3 miles south of Fort Rae, *9484.*

Calla palustris L. (HH) Frequent to common in shallow water as a contributor to the mat around lakes in the Canadian Shield section. The rhizomes may extend, just under the surface of the water, 2 to 3 feet beyond the inner edge of the mat. *Calla palustris* ranks in importance with *Menyanthes trifoliata* and *Potentilla palustris* as a mat builder. Mile 20.1 S, *7170.*

LEMNACEAE

Lemna minor L. (HH) Local in shallow still water or on mud. Noted only in the Canadian Shield section. In one pond, *Lemna minor* was growing among vast numbers of achenes of *Ranunculus gmelinii.* Mile 49 S, *7242.*

Lemna trisulca L. (HH) Locally frequent or even abundant in water to 2 feet deep, either floating just beneath the surface or forming masses, sometimes large, on the bottom. Mackenzie River, *5996;* mile 38.3 S, *8358.*

JUNCACEAE

Juncus albescens (Lange) Fern. (Hs) Rare in moss mats or peaty soil in spruce forests, and in sandy soil along streams. Kakisa River, *5320;* mile 66 S, *8015;* mile 122.6 N, *8074.*

Juncus alpinus Vill. (Grh) Infrequent in marshes, along sandy shores, in marl deposits, in moss mats and residual soil over limestone, and in disturbed soil. Most of our specimens of *Juncus alpinus* seem referrable to var. *alpinus;* several have some long-pedicelled flowers in the heads and so are best called var. *rariflorus* Hartm. Our material shows all degrees of intergradation, however, between these varieties. Mile 40.5, *5424;* Mackenzie River, *5999;* mile 39.7 N, *7555;* mile 1.8 S, *7783.*

Juncus balticus Willd. var. *littoralis* Engelm. (Grh) Locally frequent to abundant on gravelly or sandy shores, in residual soil in low places on limestone outcrops, and in gypsum and marl deposits; rare in peaty soil in muskeg forests. Kakisa River, *5509;* mile 82 N, *7674;* Great Slave Lake, mile 64.6 S, *8377.*

Juncus bufonius L. (Th) Infrequent on wet clay or sand, or in shallow water, becoming frequent in disturbed areas. Kakisa River, *4273;* Mackenzie River, *8226;* Yellowknife, *8340.*

Juncus castaneus Sm. (Hsr) Rare in wet clay or sandy soil. Mile 122.6 N, *8081.*

Juncus filiformis L. (Grh) Seen only once, in wet sand on shore of Prosperous Lake, *9227.*

Juncus nodosus L. (Gst) Rare on sandy shores. Kakisa Lake, *5656;* Mackenzie River, *8233.*

Juncus stygius L. var. *americanus* Buch. (Hs) Seen only once, in marl and shallow water at edge of lake, mile 44.5, *6114.*

Juncus vaseyi Engelm. (Hs) Rare along mucky or sandy shores. Yellowknife, *8344.*

LILIACEAE

Allium schoenoprasum L. var. *sibiricum* (L.) Hartm. (Gb) Rare along rocky shores and in residual soil over limestone. The plants are usually more robust (up to 50 cm. high, and with umbels to 4 cm. in diameter) in disturbed areas than in adjacent undisturbed areas. Collected in full bloom July 11-21; in young fruit August 10. Mackenzie River, *4131;* mile 22.5, *5623.*

Smilacina stellata (L.) Desf. (Grh) Rare along rocky shores, usually among shrubs. Collected in flower on June 25, in immature fruit July 26-28. Kakisa River, *4731;* Mackenzie River, *8236.*

Smilacina trifolia (L.) Desf. (Hsr) Rare in *Sphagnum* mounds or mats of feather moss in spruce forests, in marshy spots in spruce forests, and in peaty depressions in crystalline outcrops. In flower June 17-July 1; mature fruit in mid-August. Mile 64, *4269;* mile 36 N, *7544;* mile 39 S, *7937.*

Tofieldia glutinosa (Michx.) Pers. (Hsr) Rare in sedge mats around marly lakes and in wet peaty soil and moss mats in black spruce woods.

Collected with flower buds on June 26, in full flower on July 14-16, and with mature fruit on August 14. Mile 36, *4314;* mile 72 N, *7031.*

Tofieldia pusilla (Michx.) Pers. (Hsr) Infrequent in feather moss or *Sphagnum* mats in spruce or larch forests or in sedge mats around marly lakes. Collected in flower June 23-July 10; in mature fruit August 13. Mile 70, *4252;* mile 42.5 N, *6922.*

Zygadenus elegans Pursh. (Gb) Infrequent in loamy or sandy soil in pine, spruce, or poplar woods, in residual soil over limestone, and in disturbed peaty or sandy soil. The plants are commonly more robust and taller and have longer and more branched panicles in disturbed areas than in adjacent undisturbed ones. Collected in flower from June 26 to July 15, in maturing fruit on August 13. Mile 64, *4267;* mile 103 N, *7721.*

IRIDACEAE

Sisyrinchium montanum Greene. (Hs) Rare to locally frequent in *Agropyron-Muhlenbergia* or *Calamagrostis* grassland, in residual soil over limestone, and on sandy shores. Collected in flower from June 24 to July 8, in fruit from July 19 to August 11. Mile 17 N, *4178;* Kakisa Lake, *5647;* Mackenzie River, *8238.*

ORCHIDACEAE

Calypso bulbosa (L.) Oakes. (Gst) Rare in moist rich forests. Found in bloom and with half grown fruits as early as June 14 and with nearly mature fruits on July 13. Kakisa River, *4554;* mile 26.5 N, *6647;* mile 66.6 S, *6808.*

Corallorhiza trifida Chat. (Grh) Rare in moderately rich to rich forests. Found in bloom as early as June 19 and with half mature fruits on July 18. Mile 80, *5022;* mile 42.5 N, *6929.*

Cypripedium calceolus L. var. *parviflorum* (Salisb.) Fern. (Grh) Rare in rich woods or boggy areas, in peaty or marly soil. Collected in flower from June 19 to June 27. Kakisa Road, *4712;* mile 119.4 N, *7102*

Cypripedium guttatum Swartz. (Grh) Rare in rich spruce forests. Collected in flower from July 4 to July 15. Kakisa River, *5353;* mile 66 S, *7274.*

Cypripedium passerinum Rich. (Grh) Rare in rich spruce forests. Collected with flowers and half mature fruits in mid-July. Kakisa River, *5354;* mile 126 N, *7757.*

Habenaria hyperborea (L.) R. Br. (Grt) Rare in rich woods, muskegs, sedge meadows, and marl deposits. In flower from June 27 to July 16, and with young fruit at the latter date. Mile 52, *5368;* mile 72 N, *7642.*

Habenaria obtusata (Pursh) Rich. (Grt) Infrequent in rich woods and muskegs. In flower from mid-June to mid-July; with immature fruit in mid-July. With *Orchis rotundifolia,* the most often encountered orchid of the region. Mile 80, *5014;* mile 53.8 S, *6746;* mile 42.5 N, *6916.*

Orchis rotundifolia Banks. (Grt) Infrequent in moderately rich to rich woods, usually of spruce. Collected in flower from June 23 to July 24, in immature fruit on July 24. This and *Habernaria obtusata* are the most often encountered orchids of the region. Mile 74, *5066;* mile 60.5 N, *7016;* mile 66 S, *7998.*

Spiranthes romanzoffiana Cham. (Grt) Rare in rich woods and muskegs. In flower during July; with immature fruit on July 24. Kakisa River, *5344;* mile 35 N, *7533;* mile 66 S, *8001.*

SALICACEAE

Populus balsamifera L. (Ms) Frequent to locally common in woods, especially along shores, and, with *Populus tremuloides,* in burned over areas. The largest specimens seen were in the gorge of the Kakisa River, where balsam poplars 12 to 14 inches DBH are found. Satisfactory increment borings could not be obtained from these trees because of heartrot. With half mature fruit on June 21. Mile 11, *4826;* mile 70.5 N, *6901.*

Populus tremuloides Michx. (Ms) Frequent to common in woods, especially on drier uplands. With *Populus balsamifera,* it is characteristic of burned over areas. A tree 51 feet high and 8.7 inches DBH showed 70 annual rings. Increment borings taken of other trees were unsatisfactory because of heartrot. Mile 60, *6070;* mile 12 N, *8250.*

Salix arbusculoides Anderss. (M) Locally frequent to common along shores, in marshes, and on limestone outcrops. Especially characteristic of the flood plain of the Kakisa River just below Lady Evelyn Falls where, with *Salix bebbiana, Salix planifolia,* and *Alnus tenuifolia,* it forms the dominant vegetation. Here, *Salix arbusculoides* grows 12 to 15 feet tall and has stems 2 inches in diameter near the base. Fruit matures in mid-June. Kakisa River, *4526;* mile 29.5 S, *6733.*

Salix athabascensis Raup. (N) Local in thickets and in shrub zones around marly lakes. A low shrub to 3 feet tall. Fruit matures in early July. Mile 11, *4830.*

Salix bebbiana Sarg. (M) Frequent at edge of grasslands, along shores, in upland and lowland woods, in marshes, in thickets, in shallow residual soil over limestone, and in peaty depressions on crystalline outcrops. Attains 15 feet in height and about 2 inches in stem diameter. Fruit matures from mid-June to mid-July. Kakisa River, *4525;* Mackenzie River, *5047;* mile 34 S, *6740;* mile 101 N, *7084.*

Salix brachycarpa Nutt. (N) Occasional in marl deposits and on marly shores. Shrub to 3 feet tall. Fruit matures in July. Mile 110.5 N, *6838.*

Salix calcicola Fern. et Wieg. (N) Seen only once, in spruce-larch woods, mile 119.4 N, *7099.* With dehisced capsules on June 27.

Salix candida Fluegge. (N) Infrequent to rare at edge of grasslands, along shores, in marshes, in shrub zones around marly lakes, and in marl deposits. This willow, which grows to 5 feet tall, is conspicuous because of its silvery-green foliage. Fruit matures from mid-June to early July. Kakisa River, *4737;* mile 16.5 N, *6635.*

Salix glauca L. (M) Infrequent to frequent in pine or spruce forests, in marshes, at edge of grasslands, in marl deposits, along shores, in thickets, and in shallow residual soil over limestone. The most common willow of the highway region, *Salix glauca* is also the willow most persistent in disturbed areas. It usually grows 3 to 6 feet tall, although specimens 10 feet high are characteristic at edges of sinkholes in a white spruce-jack pine forest at mile 121.3 N. Fruit matures from mid-June through mid-August. Mile 51, *4294;* mile 2.5 S, *6662;* mile 110.5 N, *6827.*

Salix lasiandra Benth. var. *lancifolia* (Anderss.) Bebb. (M) Seen only on the beach of Kakisa Lake near the outlet into Kakisa River, *4612, 4613,* where locally it is a characteristic woody plant, and on a gravel bar in the Kakisa River, *5183.* At the latter site, this willow grows about 25 feet tall. In young fruit and with old staminate flowers on June 21.

Salix maccalliana Rowlee. (M) Infrequent at edge of grasslands, in marshes, in thickets, and along shores. Attains 10 feet in height. With mature fruit from mid-June to mid-July. Mile 54, *4720;* mile 72 N, *8266.*

Salix myrtillifolia Anderss. (N) Infrequent in forests, especially of black spruce, along shores, in marshes, and at edges of grasslands. Typically a depressed shrub, or even prostrate, less than 16 inches tall, but occasionally attaining 6 feet in height. Fruit matures mid and late June. Mile 11, *4831;* mile 23.8 N, *6643;* mile 66 S, *6798.*

Salix padophylla Rydb. *(S. pseudomonticola* Ball) (M) Seen only once, on peaty shore of lake, mile 70.5 N, *6899.* With dehisced fruit on June 22.

Salix pedicellaris Pursh. (N) Infrequent to rare in shrub zones around marly lakes, in sedge mats around both marly and muck bottom lakes, and in birch-willow thickets. Mature fruit in late June and early July. Mile 54, *5072* (var. *tenuescens* Pursh); mile 86.5 N, *6877* (var. *hypoglauca* Fern.); mile 57.6 S, *7246* (var. *hypoglauca* Fern.).

Salix petiolaris J. E. Sm. (N) Rare at edge of grasslands. Mature fruit in mid-June. Mile 16.5 N, *6633.*

Salix planifolia Pursh. (M) Infrequent to locally common on shores and in marshes. Especially characteristic on the flood plain of Kakisa River below Lady Evelyn Falls where, with other willows and with *Alnus tenuifolia,* it forms the dominant vegetation, attaining 25 feet in height and 4 inches in stem diameter. Fruit matures mid-June. Kakisa River, *4527;* mile 4.2 N, *6603;* mile 2.5 S, *6661a.*

Salix pyrifolia Anderss. (N) Rare in peaty soil on crystalline outcrops, in black spruce forests, and in birch-willow thickets. Shrub to 6 feet high. Fruit matures in late June. Mile 4.2 N, *6616;* mile 4.7 S, *6703.*

Salix reticulata L. (Ch) Local, usually growing in moss mats or in peat, in spruce forests. Mature fruit in July. Kakisa River, *4604;* mile 126 N, *7770.*

Salix scouleriana Barratt. (N) Seen only once, in marsh along Stagg River, *7963.* With dehisced fruits on July 23.

Salix serissima (Bailey) Fern. (N) Rare to locally frequent at edges of grasslands, along shores, and in shrub zones and sedge mats around marly lakes. Fruit matures mid-July to mid-August. Mile 41.5, *5418;* mile 72 N, *8270;* mile 46 S, *9261.*

MYRICACEAE

Myrica gale L. (N) Frequent to rare along shores, in *Sphagnum* or feather moss hummocks in spruce forests, in sedge and shrub zones around marly lakes, and in marshes. Flowers appear in mid-June, and fruit ripens in mid-August. Mile 64, *4268;* mile 23.8 N, *6641;* mile 2.5 S, *6663.*

BETULACEAE

Alnus crispa (Ait.) Pursh. (M) Characteristic understory plant in white spruce and more mesic jack pine forests; frequent in peaty depressions on crystalline outcrops; infrequent to dominant locally along peaty or gravelly shores. Shrub to 10 feet tall. Kakisa River, *4524;* mile 2.4 S, *6664.*

Alnus incana (L.) Moench. *(Alnus tenuifolia* Nutt.) (M) Locally dominant, sometimes with tall willows and balsam poplar, along rocky or sandy shores. The largest specimens observed, about 18 feet high and 4 inches DBH, were on the shore of Great Slave Lake at mile 128.6 N. Kakisa Lake, *4635;* Mackenzie River, *5050;* Great Slave Lake, mile 128.6 N, *7272.*

Betula glandulosa Michx. (M) Frequent to locally abundant in willow-birch thickets, in spruce or larch woods, in sedge and shrub zones around marly lakes, in marl deposits, at edge of grasslands, and along shores. Of the 48 collections of *Betula glandulosa* made along the highway, most appear better referrable to var. *glandulifera* (Regel) Gl. than to var. *glandulosa.* Dwarf birch in our region is typically a 3-5 foot shrub, although it occasionally may be 10 feet tall and have stems to 1.5 inches in diameter near the base. Mile 17 N, *4179;* mile 56, *4797;* mile 18.8 S, *6719.*

Betula occidentalis Hook. (M) Rare at edge of grasslands and in birch-willow thickets. Attains 10 feet in height and 2 inches in stem diameter. Mile 16 N, *5035.*

Betula papyrifera Marsh. (Ms) Infrequent to frequent on limestone and crystalline outcrops, in jack pine or white spruce forests, in birch zones around muck bottom lakes, and on sand plains. Usually multiple stemmed. The largest paper birch measured was 9.9 inches DBH and 42 feet tall. No satisfactory increment borings could be obtained because of heartrot. Most of the paper birches along the highway appear best referrable to var. *humilis* (Regel) Fern. et Raup; *5603,* with pinkish

brown bark, is perhaps var. *commutata* (Regel) Fern. Mile 25, *4942;* mile 19.5, *5603;* mile 2.5 S, *6685.*

URTICACEAE

Urtica dioica L. var. *procera* Wedd. (Hpr) Rare in disturbed soil Mile 30, *5525;* mile 78.3 N, *6893.*

SANTALACEAE

Geocaulon lividum (Rich.) Fern. (Grh) Rare, though sometimes common locally, in sandy soil or in lichen or moss mats in pine or spruce forests and in peaty depressions on crystalline outcrops. The flowers, which are greenish yellow and often purple tinged, bloom in mid-June; the orange or orange-red fruits mature in August. Mile 80, *5018;* mile 2.7 S, *6693;* mile 125.1 N, *8042.*

POLYGONACEAE

Polygonum achoreum Blake. (Th) Local in disturbed soil. Enterprise, *4003;* Mackenzie River, *6010;* mile 8.6 N, *8249.*

Polygonum amphibium L. (HH [Grh]) Local in marshes, along shores, and in shallow water. Four miles northeast of Fort Providence, *4036* (var. *stipulaceum* [Coleman] Fern.); Kakisa Lake, *5660* (var. *stipulaceum* forma *fluitans* [Eat.] Fern.); Kakisa Lake, *5668* (var. *stipulaceum* forma *hirtuosum* [Farw.] Fern.); mile 35 N, *7417* (var. *stipulaceum* forma *simile* Fern.); mile 20.7 S, *7904* (var. *stipulaceum).*

Polygonum aviculare L. (Th) Local in disturbed soil and along rocky and sandy shores. Enterprise, *4001;* mile 17.5 S, *7887;* mile 62 N, *8188.*

Polygonum coccineum Muhl. (HH [Grh]) Seen only once, shore of Hay River, near mile 49, Mackenzie Highway, *4362.*

Polygonum convolvulus L. (Th) Seen only once, in weedy area, Fort Providence, *9075.*

Polygonum lapathifolium L. (Th) Local in disturbed soil or along sandy and rocky shores. Number *9451* is best referred to var. *lapathifolium;* all other collections are var. *salicifolium* Sibth. Kakisa Lake, *5638;* Mackenzie River, *6002;* Prosperous Lake, *9451.*

Polygonum viviparum L. (Gst) Local in moss mats or peaty soil in spruce forests, mostly black spruce but occasionally white. In flower in mid-July. Mile 57.5, *5214;* mile 119 N, *7746a;* mile 66 S, *8002.*

Rumex maritimus L. var. *fueginus* (Phil.) Dusen. (Th) Rare in marshes, in marl deposits, and along shores. Kakisa River, *5501;* Yellowknife, *8343;* mile 39.7 N, *8412.*

Rumex mexicanus Meisn. (Hs) Rare in disturbed soil. Seen only at Enterprise, *9049a,* and Fort Providence, *9073.*

Rumex occidentalis Wats. (Hs) Infrequent in marshes and in disturbed moist soil. Mile 53, *5743;* mile 23.3 N, *8258;* mile 47 S, *8312.*

CHENOPODIACEAE

Atriplex patula L. (Th) Local in disturbed soil. All collections made along the highway are of var. *patula.* Mile 60 N, *8407.*

Axyris amaranthoides L. (Th) Seen only once, in disturbed sand, Enterprise, *9042a* (in herb. DAO).

Chenopodium berlandieri Moq. var. *zschackei* (Murr) Murr. (Th) Local in disturbed soil. Mile 21, *6152;* mile 42 S, *7938.*

Chenopodium capitatum (L.) Asch. (Th) Local in disturbed soil; seen also once on gravelly shore of Kakisa River. Kakisa River, *5746;* mile 32 N, *6983;* mile 11.4 S, *7836.*

Chenopodium glaucum L. var. *salinum* (Standl.) Boivin. (Th) Local in disturbed areas and along gravelly shores. Kakisa River, *5488;* mile 32 S, *8350.*

Chenopodium hybridum L. var. *gigantospermum* (Aellen) Rouleau. (Th) Seen only once, in gravel of road bed, mile 60, *6069.*

Chenopodium rubrum L. (Th) Local in disturbed soil. Mile 26.9 S, *7910;* mile 71.5 N, *8177.*

CARYOPHYLLACEAE

Arenaria capillaris Poir. (Ch) Rare in shallow residual soil over limestone or in sand in pine woods, becoming locally frequent in disturbed sand. Our plants are glabrous in the inflorescence and so are var. *capillaris.* Comes into bloom in late June; fruit matures from mid-July to late August. Mile 96.5 N, *6872.*

Arenaria dawsonensis Britton. (Ch) Rare in sandy soil in upland woods, along gravelly shores, in marl deposits, and in shallow residual soil over limestone, becoming locally frequent in disturbed soil. In flower the latter half of June and in early July; fruit matures from early July into August. Mile 10, *4815;* mile 96.5 N, *8162.*

Arenaria humifusa Wahl. (Ch) Seen at only 3 sites, at each of which only a few plants could be found. In marl deposit, mile 110.5 N, *7096;* in black spruce-feather moss forest, mile 72 N, *7647;* disturbed moist sand, mile 110 N, *9426.* Collected as early as June 27 with both flowers and mature fruits.

Arenaria lateriflora L. (Hpr) Rare along gravelly shores, in marl deposits, and in disturbed soil. Begins to flower in mid-June; fruits mature about 2 weeks after flowering. Kakisa River, *5485;* mile 4.2 N, *6621.*

Arenaria rubella (Wahl.) Sm. (Ch) Rare in shallow residual soil over limestone. In flower mid-June to early July; fruits mature as early as July 5. Mile 12, *4843;* mile 66 S, *6776;* mile 96.5 N, *6870.*

Cerastium arvense L. (Ch) Infrequent in shallow residual soil over limestone. Two distinct forms, glandular and non-glandular, were noted. In flower from about June 20 to the first week of July. Fruits mature during late July. Mile 12, *4857;* mile 107.1 N, *8278.*

Cerastium nutans Raf. (Th) Rare in disturbed sandy soil. Collected with both flowers and mature fruits on July 1. Kakisa River, *4900*.

Melandrium ostenfeldii Porsild. (Hs) Rare in marl deposits and on rock outcrops, both limestone and crystalline, where it grows in crevices and in shallow soil. Flowering begins in early June; some fruits have matured by mid-June. Mile 20, *4885;* mile 8.8 S, *6711;* mile 110.5 N, *6830*.

Silene menziesii Hook. (Hpr) Rare along rocky shores and in disturbed soil. Comes into flower in late June and continues until about August 1; fruits mature from July 10 until frost. Kakisa River, *4799;* mile 110 N, *7305;* Mackenzie River, 8201.

Stellaria calycantha (Ledeb.) Bong. (Hpr) Locally frequent in disturbed peaty or sandy soil, where it forms conspicuous yellowish-green loose mats. Begins to flower about mid-June, and to fruit in late June, but continues much of the summer. Mile 6, *5951;* mile 2.5 S, *6667;* mile 32 N, *6980*.

Stellaria crassifolia Ehrh. (Hpr) Local along gravelly or mucky shores, in marshes, and in sedge mats; somewhat more common in disturbed areas. In flower from mid-June until early or mid-August; mature fruit by mid-July. Mile 11, *4822;* mile 23.8 N, *6638;* mile 20.5 S, *7177*.

Stellaria longifolia Muhl. (Ch) According to Gleason (1958), *Stellaria longifolia* is ". . . closely related to the . . . northern and montane *S. longipes*, from which it was probably derived and with which it may be conspecific. The only character by which the two may be finally distinguished is the inflorescence, branched divaricately in the former and ascendingly in the latter." Of my 39 collections from the highway region that are referrable to the *S. longifolia-S. longipes* complex, many are intermediate between these two taxa in all characters and could as well be placed in one as the other. Perhaps, as Gleason suggests, *S. longifolia* and *S. longipes* may indeed be conspecific. The specimens cited below are considered to be "typical" *S. longifolia* but in reality are the extremes at one end of a series, at the other end of which is "typical" *S. longipes*. Rare in moist grassy places and thickets. In flower in late June and in fruit soon thereafter, continuing through much of the summer. Kakisa River, *5328;* mile 39.5 N, *8261;* mile 48.1 S, *8370*.

Stellaria longipes Goldie. (Ch) The taxonomy of the *S. longipes* complex is in a state of monumental uncertainty. Porsild (1955) wrote: "It seems doubtful if the taxonomy of this complex . . . group can be satisfactorily cleared up except by close study, under controlled conditions, of material grown from seed or from transplants." Until such elucidation comes about, it seems futile to try to recognize segregates from this complex, at least in the material collected by me along the Yellowknife Highway. Of these specimens, some (e.g., *5362*) have sepals that are ciliate along nearly all the margin and thus appear to be *S. ciliatosepala* Trautv.; others have a few to very few cilia on some of the sepals of some of the flowers; and still others have eciliate sepals. Rare to locally frequent in grasslands; otherwise seen only in disturbed soil. Flowers throughout much of the summer, beginning in mid-June; mature fruits appear as early as late June. Kakisa River, *4567;* mile 16.9 S, *6717;* mile 96.5 N, *6874*.

Stellaria media (L.) Cyr. (Th) Seen at only one site, garden weed, Yellowknife, *9181*.

NYMPHAEACEAE

Nuphar variegatum Engelm. (HH) Common in lakes in the Canadian Shield section. This species occupies a distinct zone, the "floating stage," in succession around these lakes. It is by far the dominant plant of the "floating stage," although species of *Potamogeton* with floating leaves and *Polygonum amphibium* may occasionally occur with it. In full flower in late June to early July; in almost mature fruit by mid-August. Mile 12.9 S, *7141*.

Nymphaea tetragona Georgi ssp. *leibergii* (Morong) Porsild. (HH) Seen only once, in a muck bottom lake, among *Nuphar*, mile 35.5 S, *8328*. In full flower on July 30.

CERATOPHYLLACEAE

Ceratophyllum demersum L. (HH) Not seen by me, but collected by Ray Murdy, United States Fish and Wildlife Service, in a 40 acre pond, mile 38.5 S, *132A* (in Herb. LAF).

RANUNCULACEAE

Actaea rubra (Ait.) Willd. (Grh) Rare in white spruce forests along the Kakisa and Mackenzie rivers. The red fruit matures in late August. Mackenzie River, *5023*; Kakisa River, *5444*.

Anemone canadensis L. (Hs) Seen only along the rocky shore of the Mackenzie River in several spots between the ferry crossing and Fort Providence. Flowering begins in early July and continues throughout the month; fruits mature as early as July 28. Mackenzie River, *7445, 8213*.

Anemone multifida Poir. (Hs) Infrequent to rare in prairies, in shallow residual soil over limestone, and in jack pine woods; becoming somewhat more common in disturbed soil. Flowers appear from mid-June to early-July; fruits mature from about the second week of July until mid-August. In about 60 per cent of the plants observed, the sepals were yellowish white, sometimes with a pink tinge; the remainder had magenta sepals. Sepals in our material measure from 7 to 13 mm. long. Mile 17 N, *4185;* mile 20, *4890*; mile 31.9 S, *6736*.

Anemone parviflora Michx. (Hsr) Rare in black spruce-feather moss or jack pine woods, in moss mats or residual soil over limestone, and in marl deposits. Flowering begins in late June and continues throughout July; earliest fruits mature in late July. In our material the glossy

white sepals are sometimes, but not always, bluish tinged at the base outside. Mile 20, *4892;* mile 66 S, *6794;* mile 44 N, *6912.*

Anemone patens L. var. *wolfgangiana* (Bess.) Koch. (Hs) Local in open jack pine woods or in shallow residual soil over limestone. Flowers not seen by us (except one that bloomed, abnormally, on August 9); fruits mature as early as June 25. Mile 103.5 N, *6844.*

Aquilegia brevistyla Hook. (Hs) Rare in jack pine and in white spruce woods; becoming more common in disturbed soil. Main flowering season from about June 24 to mid-July; fruits mature as early as July 5. The petals are yellowish-white; the spurs and sepals are purple-blue. Mile 54, *4722;* mile 110 N, *7316.*

Caltha natans Pall. (HH [Hs]) Local in shallow water or in mud or muck on shores, more common in disturbed situations. Most frequently seen in Canadian Shield section. Flowering begins in mid-June and continues until mid-August; fruits mature as early as mid-July. Mile 10.2, *5577;* mile 16.9 S, *6716.*

Caltha palustris L. (Hs) Seen only once, in marshy spot, wooded, along cold swift stream, mile 16, *4866.* In full bloom on June 28.

Ranunculus aquatilis L. var. *eradicatus* Laestad. (HH) Seen only once, in mud and shallow water, Stagg River, mile 49 S, *7241.* In flower on July 3.

Ranunculus circinatus Sibth. var. *subrigidus* (Drew) L. Benson. (HH) Rare in still shallow water, to 10 inches deep, muddy or sandy bottom. With flowers and mature fruits on July 20. Kakisa River, *5658;* mile 11.4 S, *7837.*

Ranunculus cymbalaria Pursh. (Hsr) Seen only once, beach of Prosperous Lake, *9194.* Mature fruit on August 14.

Ranunculus gmelinii DC. (HH) Locally frequent in shallow water or on muddy, peaty, or sandy shores, becoming more common in disturbed areas. Flowering starts in mid-June and continues until early August; fruits mature as early as July 3. Achenes produced in great abundance. Three varieties of this species, as noted below, occur along the highway. Mackenzie River, *6018* (var. *limosus* [Nutt.] Hara); mile 16.9 S, *6715* (var. *hookeri* [D. Don] Benson); mile 78.3 N, *6891a* (var. *hookeri* [D. Don] Benson); mile 57.6 S, *7250* (var. *gmelinii*).

Ranunculus lapponicus L. (Grh) Rare in moss mats in shrub zones around marly lakes, in *Ledum* thickets, or in spruce forests. With flowers and half mature fruit on June 28; fully mature fruit on July 23. Mile 50, *5396;* mile 127 N, *7108.*

Ranunculus macounii Britton. (Hsr) Local along gravelly, sandy, muddy, or peaty shores, or in marshes; more common in disturbed soil. With flowers and half mature fruits in early July; mature fruits from mid-July on. Kakisa River, *4991;* Mackenzie River, *5052;* mile 25.5 N, *7518;* Prosperous Lake, *9237.*

Ranunculus reptans L. (Hsr) Rare along muddy or sandy shores. Comes into flower the first week of July; with mature fruit on July 22. Of the collections cited below, *8216* and *9197* are var. *reptans;* the others are var. *ovalis* (Bigel.) Benson. Kakisa River, *5002, 5635;* Mackenzie River, *8216;* Prosperous Lake, *9197.*

Ranunculus sceleratus L. (Th) Infrequent to rare in shallow water or along gravelly, sandy, or muddy shores, in marl deposits, and in marshes; more common in disturbed areas. Flowering begins in early June; earliest achenes mature in mid-June. Mile 7, *4811;* Mackenzie River, *5053;* mile 35 N, *6653;* mile 25.7 S, *7194.*

Thalictrum venulosum Trel. (Hsr) Rare to locally common in prairies and along gravelly shores. In flower in late June and early July; fruit matures the latter half of July. A common forb in *Calamagrostis* and in *Agropyron-Muhlenbergia* grasslands at mile 14 N to 17 N. Kakisa River, *4729;* mile 16.5 N, *5037.*

FUMARIACEAE

Corydalis aurea Willd. (Hs) Seen only in disturbed soil; sometimes common where found. The golden yellow flowers begin to appear in early June and bloom throughout the summer. Fruits mature as early as the end of June. Mile 9, *4012;* mile 35 N, *6654.*

Corydalis sempervirens (L.) Pers. (Hs) Locally frequent in disturbed sandy or loamy soil; seen in seemingly undisturbed situations only in peaty depressions on crystalline outcrops, where it is rare. The pink flowers, orange-yellow tipped, begin to bloom the second week in June; fruits mature as early as July 1. Mile 66, *5250;* mile 35 N, *6660;* mile 17 S, *7164.*

CRUCIFERAE

Arabis divaricarpa A. Nels. (Hs) Infrequent in disturbed clay soil; rare in shallow residual soil over limestone. Collected in flower and young fruit on June 28. Mile 12, *4859;* mile 17 S, *7167.*

Arabis drummondii Gray. (Hs) Rare in *Calamagrostis* grassland. In flower and nearly mature fruit on July 8. Mile 13-14 N, *5029.*

Arabis hirsuta (L.) Scop. var. *pycnocarpa* (Hopkins) Rollins. (Hs) Rare in prairies, on gravelly shores, and in marl deposits; becoming more common in disturbed soil. In flower from mid-June to mid-July; earliest fruits mature about July 20. Mile 17 N, *4188;* mile 5, *5145;* mile 5.5 S, *7805.*

Arabis holboellii Hornem. (Hs) Local in disturbed soil, either sandy or peaty; rare in shallow residual soil over limestone and in peaty depressions on crystalline outcrops. Most *Arabis holboellii* observed along the highway is best referred to var. *retrofracta* (Graham) Rydb., but some of the material is close to var. *holboellii.* Enterprise, *3899;* mile 69.6 S, *6817;* mile 96.5 N, *8166.*

Barbarea orthoceras Ledeb. (Hs) Rare along muddy or mucky shores, more frequent in disturbed areas. Comes into flower in mid-June;

fruits mature as early as mid-July. Noted only in Canadian Shield section. Mile 14 S, *7143*.

Brassica campestris L. (Th) Rare in disturbed soil. With flowers and half mature fruits on July 28. Kakisa Road, *6103;* mile 39.5 N, *8260*.

Braya humilis (C. A. Meyer) Robinson. (Hs) Rare in marl deposits. Collected with flowers and half mature fruits on July 15. Sometimes apparently triennial instead of biennial. Mile 110 N, *7732*.

Capsella bursa-pastoris (L.) Medic. (Th) Rare in disturbed soil. Fruits mature as early as July 9. Enterprise, *4004;* Fort Providence, *5039*.

Cardamine parviflora L. var. *arenicola* (Britt.) O. E. Schulz. (Hs) Rare in disturbed soil. With flowers and young fruits on June 18. Mile 15.1 S, *6714*.

Cardamine pensylvanica Muhl. Infrequent on gravelly shores of Kakisa River; noted nowhere else. Flowering over by mid-July; fruits mature as early as July 12. Kakisa River, *5198*.

Descurainia richardsonii (Sweet) O. E. Schulz. (Th) Rare in disturbed soil. With flowers and half mature fruit on July 16. Mile 45, *5399;* mile 88.5 N, *7362;* mile 53.9 S, *7970*.

Descurainia sophia (L.) Webb. (Th) Locally frequent in disturbed soil. With mature fruit as early as July 13. Enterprise, *3897;* mile 3 S, *8339*.

Draba cinerea Adams. (Ch) Rare in crevices on limestone outcrops. Flowers almost gone, and some fruits half mature, on June 19. Mile 66 S, *6771*.

Draba lanceolata Royle. (Ch) Rare in shallow residual soil over limestone; becoming locally more common in disturbed areas. With flowers and half mature fruits on June 29; fruits mature as early as July 15. Mile 20, *4884;* mile 96.5 N, *8163*.

Erysimum cheiranthoides L. (Hs) Rare along gravelly and sandy shores; more common in disturbed soil. Comes into flower in late June; fruits mature in late July. Kakisa River, *5456;* Mackenzie River, *8214;* mile 30 S, *8337*.

Erysimum inconspicuum (Wats.) MacM. (Hs) Seen only once, on open, steep slope above Kakisa River below ford, *5206*. With half mature fruits on July 12.

Lepidium bourgeauanum Thell. (Hs) Rare in disturbed soil. Comes into flower in late June; fruits mature beginning mid-July. Mile 51, *5380;* mile 16 S, *7155;* mile 39.7 N, *7408*.

Lepidium densiflorum Schrad. (Hs) Rare in disturbed soil. Collected with flowers and half mature fruits as early as June 24. Kakisa Road, *4972;* mile 59.2 N, *7389*.

Lesquerella arctica (Wormsk.) Wats. var. *scammanae* Rollins. (Ch) Rare in crevices in limestone outcrops. Flowering begins in mid-June; fruits mature as early as July 4. Mile 66 S, *6773, 7284*.

Rorippa crystallina Rollins. (Hs) Rare in *Carex* marshes; found only from mile 16.5 N to mile 35 N. The collections from the highway region formed the basis of the description of *Rorippa crystallina* as a new species by Dr. Rollins in Rhodora 64:324-327. 1962. Mile 23.8 N, *6637*.

Rorippa islandica (Oeder) Borbas. (Hs) Infrequent along sandy, gravelly, muddy, or mucky shores; becoming more common in disturbed soil, especially in low areas at roadside. Comes into flower about mid-June; flowering plants can be found as late as mid-August; fruits mature as early as mid-July. Our plants have the upper leaves merely dentate (sometimes rather deeply so) rather than pinnatifid and so do not seem to be var. *islandica;* some specimens can be assigned readily to var. *fernaldiana* Butters et Abbe, and others to var. *hispida* (Desv.) Butters et Abbe. However, numerous intergrading specimens between these two extremes make the recognition of *fernaldiana* and *hispida* rather arbitrary and of little significance, at least in the highway region. Mile 30, *5526;* mile 82 N, *7054;* mile 4.8 S, *7118*.

Subularia aquatica L. (Th) Rare in shallow, clear, still water of lakes, sandy bottom. Noted only at Prelude Lake, *9215*, and Prosperous Lake, *9232*. In Prelude Lake it was associated with *Eleocharis acicularis* and *Isoetes echinospora* var. *braunii;* in Prosperous Lake, with *Eleocharis acicularis* and *Limosella aquatica*. With late flowers and all stages of fruit on August 15.

Thlaspi arvense L. (Th) Rare in disturbed soil. In mature fruit as early as July 9. Enterprise, *4000;* Fort Providence, *5040*.

DROSERACEAE

Drosera anglica Huds. (Hr) Rare in marl in shallow water and among sedges at edge of marly lakes. Comes into flower in mid-July; collected with some mature fruits on August 8. Mile 50, *5393*.

Drosera rotundifolia L. (Hr) Rare on *Sphagnum* mounds in black spruce forests and in marly bogs. Comes into flower in mid-July; not collected in fruit. Mile 64, *4264;* mile 66 S, *8012*.

SAXIFRAGACEAE

Mitella nuda L. (Hsr) Infrequent in mats of feather moss in spruce forests. The yellowish-green flowers appear in mid-June; flowers may be found until about July 10, when early fruits are mature. Mile 80.5, *5012;* mile 42.5 N, *6932*.

Parnassia multiseta (Ledeb.) Fern. (Hs) Infrequent on rocky or marly shores, on sedge mats, in low meadows, and in moss mats in spruce woods. Comes into flower about mid-July and continues until at least mid-August; fruits ripen as early as August 10. Mile 70, *4248;* mile 11.4 S, *7835;* mile 65.6 N, *8184*.

Ribes glandulosum Grauer. (N) Rare along rocky shores, in peaty depressions in crystalline outcrops, and in thickets. In full flower in

mid-June; the petals are rose, and the sepals are white or yellow-white with a rose tinge. The bright red fruits, in more or less erect racemes, mature in early to mid-July. This is a sprawling or prostrate plant whose leaves, crushed, have the odor of skunk. Mile 6, *5946;* mile 2.7 S, *6690;* mile 36 N, *7552.*

Ribes hudsonianum Rich. (N) Infrequent to frequent along rocky shores, in thickets, and in black spruce forests. In flower the latter half of June; the glaucous blue-black, unpleasant tasting fruits, in erect to drooping racemes, mature late in July and early in August. *Ribes hudsonianum* is the most common species of the genus along the highway; it is the one most likely to be seen in disturbed soil. Number *4560,* cited below, with its glabrous floral bracts, bud scales, leaves, and inflorescence, has been described by me as a new form (in Canad. Field.-Nat. 75:117. 1961). Kakisa River, *4560* (forma *glabrum);* mile 5.7 S, *7809.*

Ribes lacustre (Pers.) Poir. (N) Rare in rich spruce or pine forests and along rocky shores. The leaves have a pronounced and distinctive sheen both above and below that was seen on no other member of the genus in the highway region. The flowers, with their rose madder sepals and yellow-white petals, are in full bloom in the latter half of June; the fruits mature in late July and early August. Mile 10, *4820;* mile 66 S, *8018.*

Ribes oxyacanthoides L. (N) Infrequent along gravelly shores, in shallow residual soil on limestone outcrops, in prairies, and in peaty depressions on crystalline outcrops. In flower the second half of June. The blue-black berries mature in late July and early August and are the best tasting of any *Ribes* fruit along the highway. The flowers have greenish white sepals and white (sometimes pink tinged) petals. Kakisa River, *4505;* mile 21.3 S, *6721;* mile 80.8 N, *7046.*

Ribes triste Pall. (N) Infrequent to rare in *Populus* or spruce forests or *Salix-Alnus* thickets along shores, or in spruce forests on limestone outcrops. The rose-madder flowers, in drooping racemes, appear in mid-June and, by the end of June, are dull and faded, although persistent; the translucent bright red fruits mature in late July and early August. Kakisa River, *4533;* mile 61.8 S, *6766.*

Saxifraga aizoides L. (Ch) Seen at only one site, in seepage area around cold spring, mile 122.6 N, *8076.* In bloom and with half mature fruits on July 25. The petals are yellow, but dotted with orange.

Saxifraga tricuspidata Rottb. (Ch) Infrequent to locally common, forming mats to 2 feet across, on rock outcrops, both limestone and crystalline. In flower from mid-June to early July; fruits mature by mid-August. The petals are white, and have either orange-red dots, or orange dots and red dots in about equal numbers. Mile 12, *4853;* mile 2.8 S, *6683;* mile 103.5 N, *6860.*

Amelanchier alnifolia Nutt. (N) Infrequent to frequent on rocky shores and ridges, in shallow residual soil over limestone, and in white spruce or pine woods. Comes into flower about June 20 and continues for about 7 to 10 days; the dark red fruits, "saskatoons," prized by Indians and Whites alike, mature from mid-July to early August. Fort Providence, *4225;* mile 12, *4854;* mile 101 N, *7085;* Stagg River, *7239.*

Dryas drummondii Rich. (Ch) Local in crevices in crystalline and limestone outcrops. Collected in flower on June 19; past fruiting on August 8. The flowers have erect yellow petals and a green calyx that is covered with purple gland-tipped hairs. Mile 25.1, *6150;* mile 66 S, *6770;* Yellowknife, *9186.*

Dryas integrifolia Vahl. (Ch) Local in crevices on limestone outcrops, in marl deposits, and in sandy or peaty soil in spruce or pine woods. Collected in flower on June 19-24, but plants past flowering and in young fruit were also collected on June 19; fruits mature during the second half of July. Kakisa Road, *4695;* mile 66 S, *6774;* mile 110.5 N, *6829.*

Fragaria virginiana Duch. var. *terrae-novae* (Rydb.) Fern. et Wieg. (Hrr) Infrequent to locally frequent in shallow residual soil over limestone, in pine or white spruce forests, and along shores, becoming more common in disturbed soil. Main flowering season from about June 15 to July 1; fruits mature in late July and early August. The plants are more vigorous and show much greater development of runners in disturbed areas. Kakisa River, *4550;* mile 31.9 S, *6735;* mile 103.5 N, *6859.*

Geum macrophyllum Willd. var. *perincisum* (Rydb.) Raup. (Hs) Local in grasslands, in willow thickets, and along sandy and muddy shores. Flowers from late June to late July; with mature fruit on August 4. Mile 13-14 N, *5028;* Kakisa River, *5196;* Stagg River, *7967.*

Geum triflorum Pursh. (Hrr) Locally frequent in shallow residual soil over limestone. Collected in flower and young fruit June 29; in nearly mature fruit on July 21; past fruiting in early August. Not noted north of the Mackenzie River. Mile 20, *4880.*

Potentilla anserina L. (Hrr) Local on sandy, gravelly, or marly shores. Collected with flowers from June 25 to July 19; past flowering and with mature fruit on August 8. Most *Potentilla anserina* in the highway region is forma *anserina,* but forma *sericea* (Hayne) Hayek is occasional. Kakisa River, *4897;* Mackenzie River, *7448;* mile 65.6 N, *7618.*

Potentilla arguta Pursh. (Hs) Rare in grasslands and in shallow residual soil over limestone. Collected in fruit August 3-9. Four miles northeast of Fort Providence, *4113;* mile 25.2, *5974.*

Potentilla fruticosa L. (N) A common shrub, generally distributed except in truly aquatic habitats. In bloom from mid-June to frost; fruits mature as early as August 5. One of the most conspicuous road-

side wild flowers. Mile 28.5, *4929;* mile 8.8 S, *6710;* mile 119 N, *7746.*

Potentilla multifida L. (Ch) Seen only once, in crevices in crystalline outcrops, Horseshoe Island, Yellowknife Bay, *9486.* In fruit on August 30.

Potentilla nivea L. ssp. *hookeriana* (Lehm.) Hiitonen. (Ch) Infrequent in crevices in limestone and crystalline outcrops. Collected in flower from June 21 to July 2; past fruiting on August 13. Mile 20, *4879;* mile 103.5 N, *6847;* Yellowknife, *9175.*

Potentilla norvegica L. (Hs) Infrequent along gravelly, sandy, and marly shores; rare on crystalline outcrops; locally common in disturbed soil at roadside. Collected with flowers and young fruits on June 30; with flowers and mature fruits on July 20; flowering past by August 1. Kakisa River, *5212;* mile 6.1 S, *7123;* mile 98.5 N. *8167.*

Potentilla palustris (L.) Scop. (HH) Rare to locally common in marshes and in sedge mats around marly and muck bottom lakes. Collected in flower from June 30 to August 4; Mature fruit on August 7. This species is one of the main contributors to the mat around many muck bottom lakes in the Canadian Shield section. Four miles northeast of Fort Providence, *4048;* mile 6, *5562;* mile 47 S, *8313.*

Potentilla pensylvanica L. (Hs) Local in marl deposits, in drier grasslands, and on crystalline and limestone outcrops. With late flowers and mature fruits on July 21. All the material seen is best referred to var. *pensylvanica,* although it is somewhat variable. Mile 12, *5581;* mile 39.7 N, *7567;* Yellowknife, *9189.*

Prunus pensylvanica L.f. (N) Local on limestone outcrops and dry rocky slopes. In flower in late June and early July; the tasty, translucent, glossy red fruits mature in late August and are much appreciated by humans and bears alike. At mile 28 we observed a bear cub who stripped several *Prunus pensylvanica, Ribes oxacanthoides,* and *Amelanchier alnifiolia* bushes of their fruit, but who ignored completely the abundant bear-berries *(Artostaphylos uva-ursi)* there. *Prunus pensylvanica,* in the highway region, grows to 6 feet tall and has stems up to 3/4 inch thick. It was observed only south of the Mackenzie River. Mile 12, *4852.*

Prunus virginiana L. (N) Local on limestone outcrops. The fragrant flowers blooms from very late June until about July 10; the glossy dark red fruits mature at the end of August. Chokecherry, here at the northernmost known part of its range, grows to 5 feet tall. It was seen only between mile 20 and 25. Mile 20, *4886.*

Rosa acicularis Lindl. (N) A common shrub, almost generally distributed in mesic and xeric habitats. Collected in flower from June 17 until July 10; the glossy red or orange-red fruits mature from late July on. Mile 24, *5125;* mile 11.4 S, *7830;* mile 95.5 N, *8169.*

Rubus acaulis Michx. (Hpr) Local in grasslands, on peaty hummocks in marshy areas, in moss mats or litter in spruce forests, and on gravelly or marly shores. Collected in flower from June 13 to July 12; the translucent bright red fruits are ripe in early August. Mile 16, *4864;* mile 61.2 N, *7609.*

Rubus chamaemorus L. (Hpr) Infrequent in moss mats or peaty soil in black spruce forests and in peaty depressions in crystalline outcrops. Collected in flower only from June 13 to June 17; the pale orange fruits mature in mid-August. Kakisa Road, *4511;* mile 4.2 N, *6618;* mile 30 S, *8336.*

Rubus idaeus L. var. *canadensis* Rich. (N) Infrequent along shores, on crystalline outcrops, and in white spruce-balsam poplar woods. Collected in flower from June 17 to July 18; the bright red fruits mature as early as July 24. Mile 66, *5263;* mile 2.5 S, *6684;* mile 73 N, *6895.*

Rubus paracaulis Bailey. (Hpr) Specimens referrable here were seen only once, along stream in pine-spruce woods, mile 16, *4863.* In flower on June 28.

Rubus pubescens Raf. (Ch) Infrequent along rocky shores, in poplar or spruce woods, and in alder-willow thickets along rivers. In flower from about June 20 to July 10; fruits still small and green on July 18. Kakisa River, *4735;* Mackenzie River, *7449.*

LEGUMINOSAE

Astragalus alpinus L. (Ch) Observed only in disturbed soil, where it may be common locally. The plants are prostrate and form mats up to 3 feet across. Collected with both flowers and mature fruits in late June. Mile 73 N, *6896;* mile 66 S, *8003.*

Astragalus americanus (Hook.) Jones. (Hp) Infrequent to rare in white spruce, pine, larch, or poplar woods, becoming more common in disturbed areas. Comes into flower in early July and continues for about 3 weeks; collected with mature fruits as early as July 18. Kakisa River, *5471;* mile 4.7 S, *7801;* mile 122.6 N, *8072.*

Astragalus dasyglottis Fisch. *(A. goniatus* Nutt.) (Hpr) Rare in grasslands and along gravelly shores. The fragrant purple-blue flowers begin to bloom in mid-June and continue for about 2 months; fruits mature in mid-August and later. Mile 17 N, *4169.*

Astragalus eucosmus Robinson. (Hp) Seen only once, in disturbed clay at roadside, mile 4.7 S, *7800.* Mature fruits on July 18.

Astragalus striatus Nutt. (Hp) Seen only once, in sandy barrens by Yellowknife airport, *9242.* With old flowers and maturing fruits on August 16.

Astragalus tenellus Pursh. (Hp) Seen only once, gravelly shore just south of Hay River town, *6129.* With flowers and almost mature fruits on August 8.

Astragalus yukonis Jones. (Ch) Seen only in disturbed soil, where it is rare. With flowers and half mature fruits in very late June. Mile 72 N, *7035;* mile 8.3 S, *7138.*

Hedysarum alpinum L. var. *americanum* Michx. (Hp) Infrequent in

heavily fragrant and have tan anthers, cream filaments, and sepals that are light yellow inside and silvery-cream outside. The silvery fruits mature in the first half of August. Fort Providence, *4226;* Kakisa River, *4784.*

Shepherdia canadensis (L.) Nutt. (N) Frequent in poplar, spruce, or pine forests, in shallow residual soil over limestone, in marl deposits, and in peaty depressions on crystalline outcrops. The light brown-yellow flowers begin to open in mid-June; the nauseous translucent red fruits mature in early August. Kakisa River, *4532;* mile 21.3 S, *6720;* mile 110.5 N, *6824.*

ONAGRACEAE

Epilobium angustifolium L. (Hpr) Rare in spruce or pine forests on sand and in peaty depressions on crystalline outcrops, but frequent to common in clearings and other disturbed areas. Most *Epilobium angustifolium* in the region is forma *angustifolium,* but *7395,* with white petals, yellowish white sepals, and whitish green ovaries, is forma *albiflorum* (Dumort.) Haussk., and *7681,* with pinkish white petals, reddish green sepals, and reddish ovaries, would appear to be forma *spectabile* (Simmons) Fern. Mile 52, *5102;* mile 46 N, *7007;* mile 17 S, *7165.*

Epilobium glandulosum Lehm. var. *adenocaulon* (Haussk.) Fern. (Hp) Infrequent in wetter grasslands, and on muddy, marly, or sandy shores, becoming locally common in damp disturbed areas. Coming into flower in mid-July and continuing until mid-August; fruits mature as early as July 26. When growing en masse, the plants are conspicuous because of their red coloration. Enterprise, *4010;* Mackenzie River, *8229;* mile 59.2 N, *7390.*

Epilobium palustre L. var. *oliganthum* (Michx.) Fern. (Hpr) Rare to infrequent in disturbed moist soil. In flower from late June until late July; fruits mature as early as July 12. Mile 76, *6029;* mile 2.5 S, *7110;* mile 61.2 N, *7598.*

HALORAGACEAE

Myriophyllum exalbescens Fern. (HH) Local in shallow, still or flowing water. Beginning to flower in mid-July and continuing to at least mid-August, at which time some fruits are nearly mature. Where *M. exalbescens* grew with the next species, the two were most distinct because of the reddish stems, bracts, and pistils of the former, these structures being green in the latter. Kakisa River, *5484;* mile 13.8 S, *7866.*

Myriophyllum verticillatum L. var. *pectinatum* Wallr. (HH) Local in shallow, still or flowing water. With flowers and young fruits on July 6; some fruits mature by August 4. Mile 75 N, *7374;* mile 7.7 S, *7819.*

HIPPURIDACEAE

Hippuris vulgaris L. (HH) Infrequent in shallow, still or flowing water (to about 18 inches deep) or along shores. The flowers, with their glistening white stigmas and purple anthers, begin to open in early June; fruits mature starting in late June. Mile 44, *4298;* mile 35 S, *6743;* mile 23.5 N, *6970.*

UMBELLIFERAE

Cicuta bulbifera L. (Hs) Rare to infrequent in sedge mats around muck bottom lakes, in sedge marshes, and in low *Salix* thickets. Collected in flower between July 20 and August 2. Mile 12.7 S, *7859;* mile 61 N, *8192.*

Cicuta douglassii (DC.) Coult. et Rose. (Hs) Rare in marshes and along gravelly, muddy, or marly shores. Fruit not fully mature by August 9. Four miles northeast of Fort Providence, *4075;* Kakisa River, *6094;* mile 16 S, *7874.*

Heracleum lanatum Michx. (Hs) Seen only once along the Yellowknife Highway, one plant, basal leaves only, on grassy muddy shore of Great Slave Lake, mile 62.7 S, *8374.* This species is frequent along shores at the town of Hay River and along the Mackenzie Highway south of Hay River.

Sium suave Walt. (HH) Rare in shallow, still to flowing water. Collected in flower and very young fruit on July 21; with mature fruit on August 15. Mile 33.5, *5994;* mile 20.5 S, *7894.*

CORNACEAE

Cornus canadensis L. (Hpr) Infrequent to frequent in thickets and in spruce or pine forests, growing in sand, litter, or moss mats. Begins to flower in mid-June and continues until early August; the bright red fruits mature in the second half of August. Mile 80-81, *5057;* mile 60.5 N, *7021.*

Cornus stolonifera Michx. (M) Infrequent along rocky shores, in thickets, in shallow residual soil over limestone, and in rich white spruce forests. Main flowering season from about June 25 to July 10; the waxy white fruits mature in August. This species is usually 2 to 4 feet tall in the highway region, but occasionally, as along the Kakisa River, it grows 8 feet tall and has stems 1 inch thick. Kakisa River, *4022;* Mackenzie River, *4129;* mile 70.5 N, *6898.*

PYROLACEAE

Moneses uniflora (L.) Gray. (Hsr) Rare in moss mats in spruce forests. Comes into flower about July 8 and continues until at least early August; mature fruits not seen. Mile 80-81, *5024;* mile 36 N, *7545.*

Pyrola asarifolia Michx. var. *purpurea* (Bunge) Fern. (Hsr) Rare in moss mats in spruce or pine forests and along sandy shores. Begins to flower in late June, continuing at least until early August. Collected with mature fruit on August 10. Mile 66, *5273;* mile 54 N, *7005.*

Pyrola grandiflora Radius. (Hsr) Infrequent to rare in moss mats in

spruce forests and in peaty soil in thickets. Flowering begins about June 13 and is nearly over by mid-July; collected in fruit on August 16. Kakisa River, *4530;* mile 4.3 S, *6695;* mile 42.5 N, *6930.*

Pyrola secunda L. (Hsr) Local in moss mats, sand, or litter in spruce or pine forests. Collected in flower and with some mature fruits on July 10. Mile 64, *4263;* mile 33 N, *7527.*

Pyrola virens Schw. (Hsr) Rare in moss mats, sand, or litter in spruce and pine forests. Flowering commences about June 25 and continues for about a month; collected with mature fruit on August 14. Mile 37, *4309;* mile 83.5 N, *7057.*

ERICACEAE

Andromeda polifolia L. (Ch [N]) Infrequent to rare among sedges, mosses, or shrubs around marly lakes, in birch thickets, in rich spruce forests, and in open pine woods on sand. Collected in flower from June 19 to July 10; with mature fruits on July 26. Mile 64, *4261;* mile 4.2 N, *6624;* mile 59.6 S, *6760.*

Arctostaphylos rubra (Rehd. et Wils.) Fern. (Ch) Infrequent in moss mats, peaty soil, or litter in spruce or poplar woods. The inconspicuous flowers are past bloom by June 20, and the translucent bright red fruits mature in late July and early August and persist through the winter. Mile 70, *4253;* mile 66 S, *6797.*

Arctostaphylos uva-ursi (L.) Spreng. (Ch) Common in undisturbed mesic and xeric habitats throughout the region, but especially characteristic as a ground cover plant on limestone and crystalline outcrops and in spruce or pine woods on sand. In flower from mid-June until very early July; fruits mature in August. Specimens readily referrable to var. *uva-ursi,* var. *adenotricha* Fern. et Macbr., and var. *coactilis* Fern. et Macbr. can be found growing in close proximity, and, with them, specimens seemingly intermediate between these varieties. Mile 17 N, *4206;* mile 11.5, *4836;* mile 2.5 S, *6682.*

Chamaedaphne calyculata (L.) Moench. (N) Infrequent to locally common in sedge mats around marly and muck-bottom lakes, in moss mats in black spruce woods, in peaty depressions in crystalline outcrops, and in marshy thickets. Past flowering by June 25; mature fruit by July 22. Mile 64, *4270;* mile 4.2 N, *6615;* mile 14.5 S, *7151.*

Kalmia polifolia Wang. (Ch) Rare in open black spruce forests between mile 112 N and 119 N, where it grows among lichens (especially *Cladonia* and *Cetraria), Sphagnum* and other mosses, and other low ericads. Past flowering and with mature fruit by July 15. Mile 119 N, *7742.*

Ledum decumbens (Ait.) Lodd. (N) Frequent to common in peat or moss mounds (frequently *Sphagnum)* in spruce forests, in peaty depressions on crystalline outcrops, on peaty hummocks in boggy areas, and in litter-covered or bare sand in open pine or spruce woods. In full bloom by June 12; mature fruit by July 14. *Ledum decumbens* comes into full bloom while the flowers of *L. groenlandicum* are still in bud (although nearly ready to open). Kakisa Road, *4507;* mile 4.7 S, *6698b;* mile 67.8 N, *7024.*

Ledum groenlandicum Oeder. (N) Frequent to common in the same habitats as the above species. No consistent differences could be noted in the habitat preferences of the two species of *Ledum,* which frequently can be found growing together. *Ledum groenlandicum* comes into full flower by June 19, somewhat later than *L. decumbens;* it matures fruit by July 14. Mile 11.5, *4834;* mile 4.7 S, *6698a;* mile 119 N, *7743.*

Rhododendron lapponicum L. (N) Infrequent in rich spruce and spruce-larch woods between mile 113 N and 66 S (124 N); noted nowhere else, although said to be common on some of the islands in Yellowknife Bay and the north arm of Great Slave Lake. Past flowering and with young fruits on June 20; mature fruits by July 15. At mile 66 S, *Rhododendron lapponicum* plants are notable for their stature; they attain 30 inches (76 cm) in height (see note in Canad. Field-Nat. 76: 123. 1962). Mile 66 S, *6790.*

Oxycoccus microcarpus Turcz. (Ch) Rare on *Sphagnum* mounds in bogs and in spruce or spruce-larch forests. Collected in flower on June 24-26, in mature fruit on August 13. Mile 64, *4271;* mile 67.8 N, *7022;* mile 45 S, *7943a.*

Vaccinium uliginosum L. (N) Infrequent to frequent in moss mats or peaty soil in spruce woods, in litter-covered or bare sand in open pine or spruce woods, in birch-willow thickets, and in peaty depressions and crevices in crystalline outcrops. Past flowering by June 25; the fruits mature in late July and early August. Some of our specimens have 5-merous flowers. Kakisa Road, *4512;* mile 2.5 S, *6675;* mile 104.3 N, *8154.*

Vaccinium vitis-idaea L. var. *minus* Lodd. (Ch) Frequent to common in moss mounds or peaty soil in spruce woods, in litter-covered or bare sand in open pine or spruce woods, in sand barrens, and in peaty depressions and crevices in crystalline outcrops. Comes into flower about June 22 and continues until mid-July; the dark red fruits mature in mid-August and persist through the winter, appearing deep wine or brown purple the next spring. A characteristic ground-cover plant in pine and spruce woods on sand. Mile 64, *4265;* mile 2.5 S, *6678.*

PRIMULACEAE

Androsace septentrionalis L. (Hr) Rare in shallow residual soil or in mossy crevices on limestone outcrops, becoming more common and considerably more vigorous in disturbed areas, especially in sandy soil. Begins to flower in mid-June, and some flowers appear as late as early August; first fruits mature in early July. In the highway region, *Androsace septentrionalis* behaves as a typical biennial. Mile 25, *4945;* mile 103.5 N, *6842.*

Dodecatheon pulchellum (Raf.) Merrill. *(D. radicatum* Greene) (Hr) Rare in peaty or marly soil in black spruce woods, in shallow residual soil over limestone, and in sedge meadows on shores of marly lakes. Collected in flower on June 24, and with some mature fruits as early as July 2. Kakisa Road, *4688;* mile 67.7 N, *7631.*

Naumburgia thyrsiflora (L.) Duby. (HH) Local in shallow water or along rocky or muddy shores and in *Carex* and *Calamagrostis* meadows. Comes into flower in late June; collected in mature fruit on August 16. Kakisa River, *5178;* mile 14 S, *7145;* Stagg River, *7238.*

Primula egaliksensis Wormskj. (Hr) Seen only once, in *Betula-Myrica* thicket around marly pond, mile 113.5 N, *8120.* Past flowering, and with nearly mature fruit, on July 25.

Primula incana Jones. (Hr) Rare in grasslands, on gravelly-marly shores, and in sedge meadows and willow copses around marly lakes. In flower in mid-July, some flowers appearing until early August; fruits mature from early August on. In some colonies of this species, certain plants may have only efarinose leaves. Mackenzie River, *6000;* mile 67.7 N, *7633.*

Primula mistassinica Michx. (Hr) Rare in mossy soil along streams, in peaty soil in spruce forests, and in alder-willow thickets on lake shores. Collected in flower from June 21 to June 28. Mile 16, *4867.*

Primula stricta Hornem. (Hr) Rare in mossy clay soil in seepage areas and in disturbed peaty or clay soil in wet places. Collected in flower from June 24 to July 16. Mile 49.5, *5721;* mile 28.2 N, *6972.*

Trientalis europaea L. var. *arctica* (Fisch.) Ledeb. (Hpr) Seen only once, in peaty soil in overgrown roadway through poplar-dwarf birch-willow thicket, mile 4.2 N, *6611.* In flower on June 13.

GENTIANACEAE

Gentianella amarella (L.) Börn. ssp. *acuta* (Michx.) Gillett. *(Gentiana amarella* L. var.) (Hs) Infrequent in disturbed soil. Flowers appear in late July; fruits mature as early as August 18. Mile 0.5, *5941;* mile 121.3 N, *8090.*

Gentianella crinita (Froel.) G. Don ssp. *macounii* (Th. Holm) Gillett. *(Gentiana macounii* Th. Holm) (Th) Rare along gravelly sandy shores. Comes into flower in early August. Mackenzie River, *4132;* Kakisa River, *6092.*

Gentianella crinita (Froel.) G. Don ssp. *raupii* (Porsild) Gillett. *(Gentiana raupii* Porsild) (Th) Rare along gravelly or marly shores. Comes into flower in late July. Mackenzie River, *5998;* mile 65.6 N, *8182.*

Lomatogonium rotatum (L.) Fries. (T) Infrequent to rare in grasslands, where it becomes more common in little used wagon roads, in *Salix-Betula* thickets, and on gravelly-marly lake shores. Flowers begin to appear in late July. The corollas vary from white to light blue, with all intermediates between. Mile 65.6 N, *8399.*

Menyanthes trifoliata L. (HH) Rare in marl in shallow water of marly lakes; locally common in sedge mats around muck bottom lakes, where it may be an important contributor to the mat. Comes into flower in mid-June and continues until mid-July; fruit mature as early as July 20. Mile 44.5, *5116;* mile 35 S, *6742.*

APOCYNACEAE

Apocynum androsaemifolium L. (Hpr) Local in gravelly soil or sand in open pine woods. In flower from late June to mid-July or even later; nearly full-sized fruits seen on only one plant, on July 26. Mile 42, *5407;* mile 95.5 N, *7072;* Yellowknife, *7780.*

POLEMONIACEAE

Collomia linearis Nutt. (Th) Rare along rocky shores; locally frequent in disturbed sandy soil. Collected in early flower in mid-July, in flower and mature fruit in late July to mid-August. Fort Providence, *4224;* mile 26, *5782.*

HYDROPHYLLACEAE

Phacelia franklinii (R. Br.) Gray. (Hs) Local in disturbed soil. Begins to flower in mid-June, continuing through much of the summer. Some fruits have matured by about July 20. In the highway region, *P. franklinii* behaves as a typical biennial. Enterprise, *3895;* mile 82 N, *7050.*

BORAGINACEAE

Lappula echinata Gilib. (Th) Seen only once, in disturbed sand, Enterprise, *9051a.* Collected in mature fruit on August 7.

Lappula redowskii (Hornem.) Greene var. *occidentalis* (Wats.) Rydb. Rare in disturbed soil. Kakisa River, *5487;* mile 33 N, *7525.*

Mertensia paniculata (Ait.) G. Don. (Hs) Seen only once along the Yellowknife Highway, in spruce-poplar woods, mile 1, *7803.* In full flower on June 27. Frequent in much the same habitat along the NWT section of the Mackenzie Highway.

LABIATAE

Galeopis tetrahit L. var. *bifida* (Boenn.) Lej. et Court. (Th) Seen only once, in disturbed sand, Enterprise, *4007.*

Mentha arvensis L. (Hpr) Local along gravelly or muddy shores, in marl deposits, and in marshes, becoming more frequent in disturbed areas. Coming into flower about July 6 and continuing for about a month. Our plants are all var. *villosa* (Benth.) Stewart except *7404,* which has ovate leaves and so is best referred to var. *arvensis.* Four miles northeast of Fort Providence, *4054;* Kakisa River, *5503;* mile 39.7 N, *7404.*

Moldavica parviflora (Nutt.) Britton. (Hs) Infrequent to common in disturbed areas. Comes into flower in mid-June; with some mature fruits by July 10. Mile 52, *5082;* mile 35 N, *6656.*

Scutellaria galericulata L. var. *epilobiifolia* (Hamilt.) Jordal. (Hpr) Infrequent to rare in marshes, along rocky or muddy shores, and in marl deposits. Comes into flower about June 25 and continues until late July; fruits mature from about July 11 on. Four miles northeast of Fort Providence, *4043;* mile 9.5, *5576;* mile 72 N, *7025;* mile 20.5 S, *7897.*

Stachys palustris L. var. *nipigonensis* Jennings. (Gst) Rare on gravelly or sandy shores and in marshes. Comes into flower in late June and continues at least until early August; collected with mature fruit on August 9. Kakisa River, *5708;* mile 39.7 N, *6990.*

SCROPHULARIACEAE

Castilleja raupii Pennell. (Hp) Infrequent in grasslands, in shallow residual soil over limestone, and in thickets. Collected with flowers and nearly mature fruits on June 30, but flowers may be found throughout the summer. Mile 17 N, *4144;* mile 10, *4816;* mile 31.9 S, *6738.*

Euphrasia aff. *subarctica* Raup. (Th) Seen only once, on rocky slope above inlet on island in Mackenzie River 1 mile west of Fort Providence, *4130.* Specimens of this collection have been examined by Messrs. Yeo and Sell (Cambridge University) who comment as follows: "Specimen *4130* . . . has the general characters of *E. subarctica* Raup, but all the plants in the series seen lack glandular hairs, which usually densely cover the leaves in this species, and if they do not, are present on at least some plants in all the samples we have seen. We are therefore not able to accept these specimens as being definitely *E. subarctica,* but they might be recorded as showing affinity with that species."

Limosella aquatica L. (Th) Seen only once, in shallow water, sandy bottom, Prosperous Lake, *9233.* With mature fruits on August 15.

Pedicularis labradorica Wirsing. (Hs) Infrequent to rare in moss mats or litter in spruce or pine woods and in thickets. Comes into flower about June 22 and continues for about 2 months; mature fruits by early August. Mile 56, *5010;* mile 125.1 N, *8045.*

Rhinanthus crista-galli L. (Th) Rare in shallow residual soil over limestone, in thickets, and along rocky shores. Flowering begins in mid-July; mature fruits found on August 8. Mile 12, *5580;* Mackenzie River, *6008.*

Veronica peregrina L. var. *xalapensis* (HBK) Pennell. (Th) Rare on gravelly or sandy shores. Mature fruits on July 26. Kakisa River, *5715;* Prosperous Lake, *9234.*

Veronica scutellata L. (Hpr) Rare along shores. Collected with flowers and young fruits on July 1; with mature fruits on July 9. All our plants are forma *villosa* (Schum.) Pennell. Kakisa River, *5186;* mile 20.5 S, *7179;* mile 35 N, *7411.*

OROBANCHACEAE

Boschniakia rossica (Cham. et Schl) Fedtsch. (Gp) Seen only once, in white spruce forest, growing under *Alnus crispa* in deep mats of *Hylocomium splendens,* along Kakisa River below Lady Evelyn Falls, *4520.* Found in flower on July 16 and in mature fruit on August 27.

LENTIBULARIACEAE

Pinguicula villosa L. (Hr) Seen only once, on a *Sphagnum* mound in a black spruce-larch forest, Kakisa Road, *4701.* In flower on June 24.

Pinguicula vulgaris L. (Hr) Rare in moss mats in spruce forests, in marl or in sedge mats around marly lakes, and in wet clay soil over limestone. Collected in flower from June 26 to July 15; mature fruit in early August. Mile 44.5, *5121;* mile 72 N, *7028.*

Utricularia intermedia Hayne. (HH) Infrequent in shallow water. Collected in flower from July 10 to July 17; not found in fruit. The leafless, bladder-bearing branches are translucent white. Winter buds form as early as July 1. This species is most often seen in marly lakes. Mile 54, *5080;* Mackenzie River, *6006;* Stagg River, *7958.*

Utricularia minor L. (HH) Rare in shallow water, often growing among *Utricularia vulgaris* and *U. intermedia.* Not seen in flower or fruit. This bladderwort is easily overlooked. We were able to find it only in the Canadian Shield section. Stagg River, *8309.*

Utricularia vulgaris L. (HH) Local in shallow, still or flowing water. Comes into flower in late June, continuing until at least August 10; not seen in mature fruit. Winter buds not noted until very late July and early August. Mile 50, *5105;* mile 12.9 S, *7140;* mile 75 N, *7373.*

PLANTAGINACEAE

Plantago major L. (Hr) Infrequent along rocky shores, becoming frequent in disturbed soil. The plant of shores and the plant of waste places appear to be identical. The leaves vary from stiffly upright to almost prostrate, even in the same colony. Comes into flower in very late June and early July; fruits mature starting in mid-August. Fort Providence, *4228;* Kakisa River, *5496;* mile 60 N, *8408a.*

Plantago septata Morris. (Hr) Infrequent in shallow residual soil over limestone; in disturbed soil the plants are twice as large as in undisturbed situations. In full flower June 21; fruits mature in late July and early August, Mile 28.5, *4907;* mile 80.8 N, *7047.*

RUBIACEAE

Galium labradoricum Wieg. (Hpr) Rare in moss mats in spruce forests and among sedges at shores of marly lakes. Flowering begins in early July; fruits mature starting in early August. Mile 53, *4958;* mile 36 N, *7551.*

Galium septentrionale R. et. S. (Hpr) Infrequent to frequent along rocky shores, in drier grasslands, in shallow residual soil over limestone, and in pine, spruce, or larch woods, becoming somewhat more common in disturbed areas. Flowering season extends from about June

24 to early August; fruits mature starting early August. This plant is locally abundant on anthills in the Fort Providence grasslands. Enterprise, *3891;* mile 17 N, *4184.*

Galium trifidum L. (Hpr) Infrequent on gravelly and mucky shores and in wetter grasslands, becoming more common in disturbed soil. Collected in flower from June 24 to July 27; in fruit as early as mid-July. Kakisa River, *4992;* mile 23.5 N, *6971;* mile 14 S, *7147.*

CAPRIFOLIACEAE

Linnaea borealis L. var. *americana* (Forbes) Rehd. (Ch) Frequent in spruce or pine forests, growing either upon moss mats, in litter, or in sand. Comes into flower late in June; mature fruits appear in late August. Mile 80, *5017;* mile 60.5 N, *7020;* Yellowknife, *9244.*

Lonicera dioica L. var. *glaucescens* (Rydb.) Butt. (N) Rare in shallow residual soil over limestone, usually in pine-dominated areas. The yellow to red-orange flowers bloom during the second half of June; the fruits, translucent orange-red, mature in very late August and early September. The leaves are glaucous below. This plant, in the highway region, is a twiggy erect shrub 1 to 2 feet tall, with none of the twining tendencies it exhibits in areas further south. Mile 56, *5010a;* mile 103.5 N, *6857.*

Symphoricarpos occidentalis Hook. (N) Seen only once, in grassland, mile 17 N, *4141.* Collected in flower on August 11.

Viburnum edule Raf. (N) Frequent along gravelly shores, in poplar, spruce, or pine woods, and in peaty depressions in crystalline outcrops. Begins to flower about June 20, and flowering is over by mid-July; the translucent red fruits mature in early August and are valued by some Yellowknife people for preserves. This species may attain 5 feet in height in the highway region. Mile 11.5, *4837;* mile 21.3 S, *6724;* mile 126 N, *7760.*

CAMPANULACEAE

Campanula rotundifolia L. (Hsr) Rare to infrequent in shallow residual soil over limestone and in pine woods, becoming frequent to common in disturbed soils, where it is one of the conspicuous roadside wildflowers. Comes into bloom in very late June and continues into late August; fruits mature as early as August 1. Enterprise, *4009;* mile 66 S, *7263;* mile 110 N, *7303.*

Lobelia kalmii L. (Hs) Rare in wet marl among sedges at edge of marly lakes or depressions. Comes into flower in very late July and early August. Mile 20, *5764.*

COMPOSITAE

Achillea lanulosa Nutt. (Hsr) Frequent to infrequent in drier grasslands, on limestone outcrops, along rocky shores, and in sand or moss and lichen mats in spruce or pine forests, becoming common in disturbed soil. Collected in flower from late June until mid-August; achenes mature from mid-July on. A pink-flowered form is occasional. This species is generally much more robust and common on disturbed sites than in adjacent undisturbed ones. One of the conspicuous roadside wildflowers. Enterprise, *3892;* mile 82 N, *7049.*

Achillea sibirica Ledeb. (Hs) Rare along rocky and sandy shores and in disturbed soil at roadside. Collected in flower from July 9 to August 5; with maturing achenes in mid-August. Kakisa Lake, *6097;* mile 16.5 N, *7483;* mile 31.5 S, *7933.*

Antennaria parvifolia Nutt. (Ch) Local in grasslands, on limestone outcrops, on gravelly-marly shores, and in disturbed soil at roadside. Flowering in July. Mile 32 N, *7424.*

Antennaria pulcherrima (Hook.) Greene. (Ch) Rare in peaty soil in thickets and spruce forests; somewhat more common in disturbed peaty or sandy soil at roadside. In flower during late June and July. Mile 44.5, *5727;* mile 119 N, *7741.*

Antennaria rosea (Eat.) Greene. (Ch) Rare along sandy or muddy shores and in disturbed soil at roadside. In flower during July. Kakisa River, *4966;* mile 88.5 N, *7361.*

Antennaria subviscosa Fern. (Ch) Seen only once, in prairie, mile 17 N, *4194a.* Past flowering on August 11.

Arnica chamissonis Less. ssp. *foliosa* (Nutt.) Maguire. (Hsr) Rare along rocky shores and in meadows. Collected in flower from July 28 to August 3. Hay River, *3888;* Mackenzie River, *8242.*

Arnica lonchophylla Greene. (Hsr) Infrequent on limestone outcrops, in sand in pine forests, in crevices on crystalline outcrops, and in disturbed soil at roadside. In flower from mid-June until late July; mature achenes by July 20. Most of the material referrable here is typical *A. lonchophylla;* one collection (mile 42.5 N, *6933)* is transitional to ssp. *arnoglossa* (Rydb.) Maguire. Mile 16, *4873;* mile 4.3 S, *6694;* mile 96.8 N, *7078.*

Artemisia biennis Willd. (Hs) Local in disturbed soil. Does not come into flower until mid-August. Mile 66, *6106;* mile 34 N, *8425.*

Artemisia campestris L. ssp. *borealis* (Pall.) Hall et Clem. (Hs) Infrequent to rare in shallow residual soil over limestone. In flower during the second half of July; collected with mature achenes on August 28. Mile 13.5, *5569;* mile 96.7 N, *7965.*

Artemisia frigida Willd. (Ch) Seen only once, in disturbed sand along Kakisa Road, *9448.* Several small sterile plants were all that could be found.

Artemisia ludoviciana Nutt. var. *gnaphalodes* (Nutt.) T. et G. (Hsr) Seen only once, a large clump at roadside, mile 9.5, *6117.* Not yet in flower on August 7. Collected here in 1959; observed here in 1961 and 1962.

Artemisia tilesii Ledeb. ssp. *unalaschensis* (Bess.) Hulten. (Hpr) Local

in disturbed soil, especially along shores. Comes into flower in late July. Mile 79.5, *6021;* mile 62.7 S, *8375.*

Aster alpinus L. var. *vierhapperi* (Onno) Cronq. (Hsr) Infrequent in shallow residual soil or in crevices on limestone outcrops. Comes into flower in late June; mature achenes by July 21. Mile 26, *4334;* mile 80.8 N, *6889.*

Aster brachyactis Blake. (Th) Local along shores and in marl deposits; locally common in disturbed soil at roadside. Comes into flower in very late July and early August; mature achenes in August. Mile 75 N, *8395;* Prosperous Lake, *9193.*

Aster ciliolatus Lindl. (Hsr) Rare in shallow residual soil on limestone outcrops, in grasslands, in sandy pine-spruce woods, on marly shores, and in peaty soil in black spruce woods; common locally in disturbed soil at roadside. This species is a conspicuous roadside wildflower. Comes into flower in mid-July, continuing until mid-August; with mature achenes late in August. Flowering specimens are infrequent and small in undisturbed situations thought sterile plants may abound; in disturbed soil, flowering is abundant and the plants are large and vigorous. Mile 51, *5734;* mile 13 N, *7480.*

Aster falcatus Lindl. (Hpr) Seen only once, in grassland, mile 17 N, *4149.* In flower on August 11.

Aster hesperius Gray var. *laetevirens* (Greene) Cronq. (Hpr) Seen only once, limestone crevices, Alexandra Falls, *4365.* In flower on August 15.

Aster johannensis Fern. (Hpr) Rare in marshes on shore of Great Slave Lake, mile 62.7 S, *8373,* and mile 64.6 S, *8376.* In flower on August 3.

Aster junciformis Rydb. (Hpr) Local in drier grasslands, on gravelly or sandy shores, in marl deposits, and in sedge meadows. In flower from mid-July to mid-August. Four miles northeast of Fort Providence, *4045;* mile 6, *5953;* Stagg River, *7961.*

Aster pansus (Blake) Cronq. (Hp) Local in drier grasslands, in marl deposits, and in disturbed soil at roadside. Flowers appear in late July and early August; achenes mature from late August until frost. Four miles northeast of Fort Providence, *4087.*

Aster sibiricus L. (Hpr) Rare in sandy soil in spruce or pine woods; frequent to common in disturbed soil at roadside. Comes into flower in late June and continues into August; achenes mature in August. Kakisa River, *4018;* mile 107.5 N, *7331.*

Bidens cernua L. (Th) Seen only once, along muddy shore of Stagg River, *8308.* Early flowers on July 30.

Crepis elegans Hook. (Hs) Seen only once, along road to Louise Falls on Hay River, *6153.* In flower and mature fruit on August 9.

Crepis tectorum L. (Th) Rare in disturbed soil at roadside. With flowers and mature fruit on August 3. Mile 30, *6116.*

Erigeron acris L. (Hs) Rare in marl deposits and willow thickets; frequent in disturbed soil at roadside. In flower from June 25 to early August; mature achenes collected August 3. Two varieties grow in about equal numbers along the highway; var. *asteroides* (Andrz.) DC. *(3893, 7441, 7803)* and var. *elatus* (Hook.) Cronq. *(5308, 6999, 7114).* Enterprise, *3893;* mile 16 N, *7441;* mile 4.7 S, *7803;* Kakisa River, *5308;* mile 41.3 N, *6999;* mile 4.8 S, *7114.*

Erigeron compositus Pursh var. *glabratus* Macoun. (Ch) Rare in shallow residual soil or in crevices on limestone outcrops. In flower on June 21; past fruiting on July 14. Mile 23.5, *5961;* mile 103.5 N, *6846.*

Erigeron glabellus Nutt. var. *pubescens* Hook. (Hs) Rare in shallow residual soil on limestone outcrops and in sandy pine woods. In flower from late June until mid-July; mature achenes on July 27. Mile 28.5, *4911;* mile 28 N, *9096.*

Erigeron hyssopifolius Michx. (Hp) Infrequent in peaty soil or moss or lichen mats in spruce forests and in marl deposits. Comes into flower in mid-June; some fruits are mature by mid-July. Kakisa Road, *4569;* mile 35 N, *6659.*

Erigeron lonchophyllus Hook. (Hs) Infrequent in grasslands, on gravelly-marly shores, and in marl deposits. Begins to flower in early July; mature achenes by August 9. Some plants of *E. lonchophyllus* may be only 1.8 cm. high and bear only 1 head. Kakisa River, *6081;* mile 110.5 N, *7733.*

Erigeron philadelphicus L. (Hs) Rare on gravelly-sandy shores. In flower in mid-August. Kakisa River, *5307.*

Gnaphalium uliginosum L. (Th) Seen only once, in wet sand and shallow water of Prosperous Lake, 9238. Mature achenes on August 15.

Helenium autumnale L. (Hp) Seen only in limestone crevices, Alexandra Falls, *4378,* and in roadside ditch, 12.5 miles south of Hay River on Mackenzie Highway, *5937.* In flower and with maturing achenes on August 15.

Hieracium umbellatum L. (Hp) Infrequent in shallow residual soil or in crevices on limestone outcrops, in sandy pine forests, and along rocky shores; more common in disturbed soil at roadside. The earliest collection made, July 14, has flowers and mature fruits. Mile 24, *5629;* mile 93.5 N, *7687;* mile 17.5 S, *7888.*

Lactuca pulchella (Pursh) DC. (Hsr) Rare along rocky shores and in marl deposits. Collected in flower July 7-11; in fruit July 27. Mackenzie River, *7443;* mile 39.7 N, *7570.*

Matricaria maritima L. var. *agrestis* (Knaf) Wilmott. (Th) Seen only once, disturbed soil at roadside, mile 57 N, *9105.* In flower and with some mature achenes on August 9.

Matricaria matricaroides (Less.) Porter. (Th) Local in disturbed soil. Enterprise, *3896;* Yellowknife, *7855.*

Petasites frigidus (L.) Fries var. *nivalis* (Greene) Cronq. (*P. vitifolius*

Greene) (Grh) Rare in moist disturbed gravelly soil at roadside and in wet woods. Past flowering and with immature fruit on June 15 and June 27. Mile 7, *4810;* mile 110 N, *9428.*

Petasites frigidus (L.) Fries var. *palmatus* (Ait.) Cronq. *(P. palmatus* [Ait.] Gray) (Grh) Rare in sand in pine woods and in disturbed soil at roadside. Past flowering and with immature fruit on June 18. Kakisa River, *4562;* mile 110 N, *7319.*

Petasites sagittatus (Pursh) Gray. (Grh) Rare to locally frequent in grasslands, in marshes, in birch-willow thickets, and in disturbed soil at roadside. Past flowering and with immature fruit on June 18. Mile 17 N, *4165;* Kakisa River, *4565;* mile 23.6 S, *6727.*

Senecio congestus (R. Br.) DC. (Hs) Infrequent to locally common along shores, in marl deposits, in wet meadows, and in disturbed soil of roadside ditches. Collected in flower June 30; with early mature achenes on August 14. Mile 30, *4332;* mile 14 S, *7144;* mile 61.2 N, *7610.*

Senecio eremophilus Rich. (Hp) Seen only once, in disturbed sandy soil along road to ford over Kakisa River, *5327.* In flower on July 15.

Senecio indecorus Greene. (Hs) Infrequent in sedge meadows, in marl deposits, and in disturbed soil at roadside. Flowers in mid-July; nearly mature fruit by August 4. Mile 9, *5567;* mile 39.7 N, *7565.*

Senecio lugens Rich. (Hsr) Local in moss mats or peaty soil in black spruce woods; somewhat more common in disturbed peaty or sandy soil at roadside. Collected in flower on June 23; in nearly mature fruit on July 15. Mile 56, *4785;* mile 66 S, *8010;* mile 28 N, *9094.*

Senecio pauperculus Michx. (Hs) Rare in grasslands; locally frequent in moist disturbed soil at roadside. In flower during very late June and July; immature fruits on July 27. Two of our specimens *(5259, 5265),* collected at mile 66, are hybrids between *S. pauperculus* and *S. indecorus,* according to Dr. T. M. Barkley. Kakisa Road, *5326;* mile 81.5 N, *7371.*

Senecio plattensis Nutt. (Hs) Collected twice, in grassland, mile 13 N-14 N, *5031,* and in disturbed soil at roadside, mile 52, *5091.* In flower July 8-10.

Senecio tridenticulatus Rydb. (Hs) Local in shallow residual soil over limestone and in litter or sand in jack pine forests; local in disturbed soil at roadside. In flower June 21; in flower and fruit July 4. Our 1959 collections *(4674, 4844, 4875, 4912, 5009, 5091)* of this species were identified by T. M. Barkley. Dr. A. E. Porsild (in litt.) considers the Mackenzie plants to be *Senecio cymbalarioides* Nutt. var. *borealis* T. et. G. Mile 12, *4844;* mile 103.5 N, *6865.*

Senecio vulgaris L. (Th) Seen only once, garden weed, Yellowknife, *9301.* With mature fruit on August 19.

Solidago canadensis L. var. *salebrosa* (Piper) Jones. (Hpr) Infrequent to rare in grasslands and along sandy or rocky shores; locally common in disturbed soil at roadside. In flower in late July and early August; achenes not yet mature on August 11. Mile 17 N, *4190;* mile 0.5, *6118;* mile 64.6 S, *8378.*

Solidago multiradiata Ait. (Hsr) Rare in moss mats or litter in spruce forests; local in disturbed soil at roadside. In flower during July; achenes nearly mature on August 3. Mile 31.5 S, *7929.*

Solidago spathulata DC. var. *neomexicana* (Gray) Cronq. *(S. decumbens* Greene var. *oreophila* [Rydb.] Fern) (Hsr) Rare in shallow residual soil over limestone and in sand in pine woods; considerably more common in disturbed soil at roadside. Begins to flower in mid-July; with nearly mature achenes on August 3. Mile 51, *4292;* mile 98.8 N, *7713;* Yellowknife, *8347.*

Sonchus arvensis L. var. *glabrescens* Guenth., Grab. et Wimm. (Hsr) Seen only once, at roadside, mile 33 N, *9439.* With flowers and very immature fruits on August 27.

Tanacetum vulgare L. (Hs) Seen only once, waste place, mile 5 N, *8428.* In flower on August 4.

Taraxacum ceratophorum (Ledeb.) DC. (Incl. *T. lacerum* Greene) (Hr) Frequent in disturbed soil at roadside; rare in crevices in limestone outcrops and in sandy pine woods. In early flower mid-June; mature achenes by June 22. Mile 23.5, *5133;* mile 35 N, *6658;* mile 6.2 S, *6709.*

Taraxacum officinale Wiggers. (Hr) Common in disturbed soil, especially about settlements. With mature fruits by June 24. Fort Providence, *6937.*

ACKNOWLEDGEMENTS

The Yellowknife Highway project was begun when I was on the staff of Chicago Natural History Museum; the museum financed the 1958 and 1959 field work. The project was completed after I had joined the staff of the University of Southwestern Louisiana. A grant (G15904) from the National Science Foundation supported the 1961 and 1962 field work. To the Museum, the University, and the Foundation I am deeply grateful. Gratitude is due also to the late Dr. Theodor Just, for his advice and encouragement and for his efforts in behalf of the project; to Mr. and Mrs. B. Cooper, formerly of Yellowknife, for their many kindnesses; and to the following botanists, for their help with the identification of various taxa: Faye K. Daily (Characeae); John W. Thomson (lichens); H. L. Blomquist (certain *Sphagnum*); Bodil Lange (certain *Sphagnum*); H. Crum (bryophytes); George W. Argus (*Salix*); A. E. Porsild (*Melandrium*); Lyman Benson (certain *Ranunculus*); Reed C. Rollins (*Braya*, certain *Draba, Lesquerella, Rorippa crystallina*); N. H. Russell (*Viola*); Bassett Maguire (certain *Arnica*); Arthur Cronquist (certain *Aster* and *Erigeron*); and T. M. Barkley (certain *Senecio*).

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